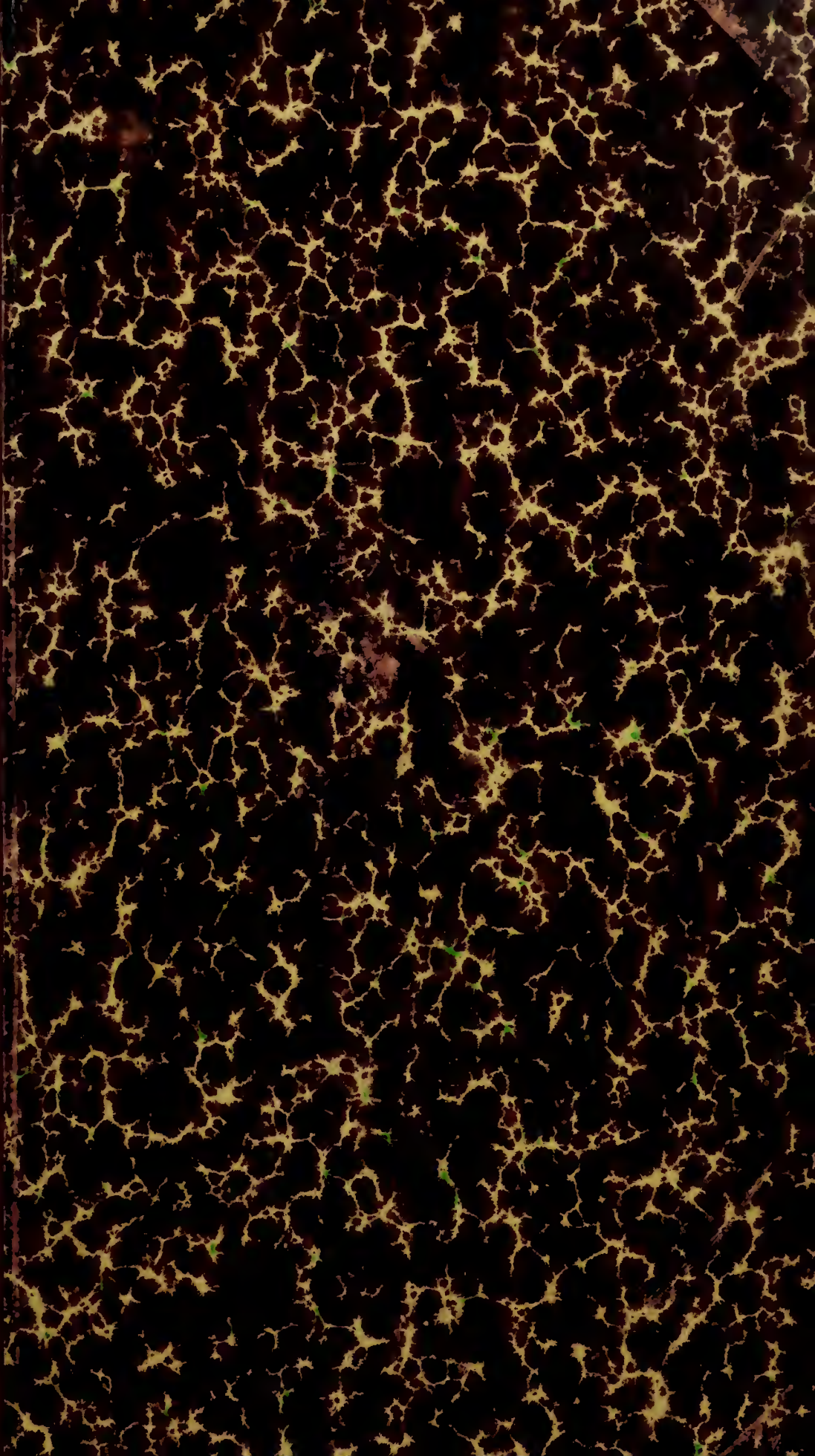


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The Journal Medical Association of Georgia

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January-December, 1937

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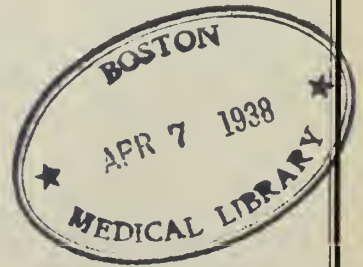
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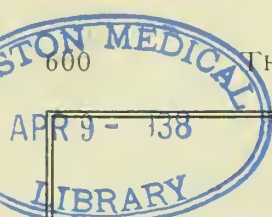
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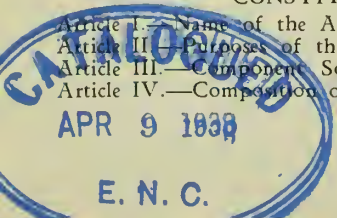
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"BENZEDRINE INHALER" IN SINUSITIS

Bertolet (Clin. Med. & Surg., 44:25, Jan., 1937)
reports on results obtained in 306 cases of sinusitis
treated with the vapor of benzyl menthyl carbinamine,
in the form of "Benzedrine Inhaler."

In the acute and chronic sinusitis group of 129 cases,
70 per cent obtained excellent results with the use of
the vapor not oftener than once an hour; 23 per cent
had fair results; and 7 per cent poor. Best results were
obtained with those patients who used the Inhaler post-
operatively, and least favorable results were observed
in those cases where operation was indicated. In the
acute rhinitis group, 83 per cent showed excellent re-
sults, with 14 per cent fair and 3 per cent poor.

The author concludes that for the treatment of
paranasal sinusitis "Benzedrine Inhaler" offers an
efficacious and desirable form of therapy.

The Commonwealth Fund, 41 East 57th Street,
New York City, announces the opening of its eighth
hospital at Tupelo, Mississippi. It is a fireproof, well-
equipped hospital held in trust for the public, open to
all qualified physicians and designed to serve the sick
without discrimination. The Commonwealth Fund is
undertaking to provide one new hospital each year in
a predominantly rural community.

A LOGICAL TREATMENT OF CHRONIC ARTHRITIS

Leir (*Clin Med. & Surg.*, Nov. 1937) reports on 200 cases of definitely proven arthritis of all types in which the Calcium Double Salt of Benzoic and Benzyl Succinic Acids was used. In 140 cases (70 per cent) this product was used exclusively, and in 60 cases (30 per cent) it was used as a basic treatment with certain adjuncts. It was shown that regardless of age, sex, or the duration of the disease, uniformly good results were obtained in every type of the disease. In the atrophic type 73 per cent showed improvement, ranging from moderate to almost complete restoration in 9 per cent of the cases. In the hypertrophic type, 61 per cent showed the same results, with $5\frac{1}{4}$ per cent showing return to normal. In the mixed cases, $47\frac{1}{4}$ per cent showed definite improvement, with $5\frac{1}{4}$ per cent also showing almost complete recovery. In the total, the 140 cases showed 64-2/7 per cent of definite improvement under this treatment alone, and 58-1/3 per cent showed a corresponding improvement when adjunct treatments were employed.

Under the heading "Complications," the significant fact was demonstrated that gall-bladder conditions were the most common and cardio-vascular next in frequency. As this drug is specifically intended to attack these very conditions and showed salutary action on both the gastro-intestinal and circulatory systems, it is evident that the underlying theory as well as the method of treatment are largely correct.

It was shown that a large percentage of the patients had received dental care before beginning treatment, and other definite foci of infection had been removed.

The most favorable results should not be expected before 3 months of treatment which should be continued for two months after all symptoms have subsided.

In his summary, he states that best results were obtained when:

1. Therapy was started in early stage of the disease.
2. Thorough treatment (3 months or more) was followed.
3. Close cooperation on the part of the patient was obtained.

The author states that arthritic conditions are best handled by prolonged use of the drug in question, and attention to the following steps:

1. Control of intestinal toxicity.
2. Proper diet control.
3. Correction of any focus of infection.
4. Decrease of nerve tension.
5. Increase of peripheral circulation.

Clinical observation over a period of two and one-half years proved that regardless of the age or condition of the patient, a thorough treatment along these lines will benefit a large percentage of cases of either type.

A reprint of a two-year clinical report on Arthritis is available. Write U. S. Standard Products Co., Woodworth, Wisconsin, for a copy of this report.

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., January, 1937

Number 1

SOUTHERN MEDICINE, PAST AND FUTURE*

JAMES S. MCLESTER, M.D.
Birmingham, Ala.

About thirty-five years ago, just after the Boer War, an English medical officer told me that the British army in South Africa had been instructed to accept for its medical corps the graduates of any European medical school, but not those of American schools; these last must be examined. This humiliated me greatly, all the more because I knew that this order had been given with good reason. For at the time, although we had in America many of the best medical schools, we also had the poorest; indeed, I am tempted to say we had all of the poorest. Shortly thereafter there was founded the Council on Medical Education of the *American Medical Association* which began its standardization of medical schools. Gradually, through the course of years, this council has brought about such an improvement in medical education as entirely to reverse the situation. Now the picture is different. Were I again to meet that European medical officer I could truthfully say that today we recognize no poor medical schools, that our average equals their best and that our best is unequalled in the world. Except for the one cloud on the horizon I would say that in the United States the future of medicine is bright. If medicine in this country, unhampered by governmental interference, is permitted to continue its orderly development great things may be expected. What part will the Southern states play in this development? To answer this question is the object of this address.

In medicine, as in other fields of human

endeavor, the South has always furnished leaders. Many of you will recall the interesting story of one of these leaders, young Bassett of Huntsville, who was immortalized by Osler in his delightful essay "An Alabama Student." Bassett lived in that happy period before the Civil War and was one of those ambitious souls who, seeking knowledge and inspiration in foreign travel, brought back to the United States all that was best in European medicine. Of that same period was Marion Sims, another Alabamian, who toward the completion of his formative years moved to New York and became a leader in American surgery. In his professional career he touched the two extremes; first, the young doctor perfecting his surgical technic upon Negro slaves in Montgomery, and then in later years a consultant at St. Cloud at the bedside of the Empress Eugenie. A broad area to be spanned in the lifetime of one man! Of a slightly earlier period was the Kentucky surgeon, Ephriam McDowell, who in 1809 performed upon Mrs. Crawford the first ovariectomy and who a few years later in a wild mountainous region of Tennessee performed the same operation upon another patient with Andrew Jackson as his assistant. From Georgia, however, came the greatest contribution of all. First among the epoch-making discoveries of the world ranks the discovery of ether by the great Georgian, Crawford Long. It is difficult to estimate in human values the greatness of his contribution to the race. Many other brilliant medical men were developed in the South during that period and among them was another Georgian, who, though born in this State, moved to Nashville and will always have his great name associated with the profession of Tennessee, Paul F. Eve. He was a great leader, a surgeon in three wars, and the first American to perform a hysterectomy. Those were great

*Address at the Centennial Celebration of Emory University, Atlanta, December 8, 1936.

Southerners, full of initiative and courage, and they did their part in creating a brilliant civilization.

Then came the Tragic Era and during the next two generations, the blighting influence of poverty. The Southern states labored under a heavy handicap. They alone among the United States had watched a hostile army trample their fields and had seen conquering troops quartered in their cities. The poverty of that period; that is, the period from the Civil War to the decade just preceding the World War, and the economic handicap under which the Southern states labored had a profound influence upon medical progress, but in spite of that influence the South made noteworthy contributions to medical knowledge. Practice was difficult and arduous, and oftentimes it tried men's souls. I should like to remind you of some of the difficulties under which the Southern physician practiced during that period and over which he has only recently come to prevail. There were few well equipped medical schools and few hospitals with adequate endowment. Because of lack of funds the broadening influence of travel was only too often denied the ambitious young student. He oftentimes worked in areas where the means of communication were poor, the facilities at his disposal meagre in the extreme, and where the influence of stimulating professional contact was lacking. Surgical operations of necessity were often performed in the home on the kitchen table. But equipment is not everything. There were compensating factors, and the South had these men—men of the right type, men of resourcefulness, of great native ability, and of character. When we stop to contemplate the work and the contributions to medical science of many of the men of that period we realize that, handicapped as she was, the South furnished to the nation her share of great medical men. Witness the work of L. L. Hill of Montgomery, the first American surgeon successfully to suture the human heart, the contributions to education of John G. Westmoreland and later of W. S. Elkin of Atlanta, the wise leadership exercised by Abner W. Calhoun, and the farreaching work of Gorgas, of Henry R. Carter and of a host of others. We sympathize with the physicians of that period in the difficulties they encountered and

our profound admiration goes out to them for the manner in which they overcame those difficulties.

Those difficulties now belong to the past. The South is again coming into its own and confidently we can turn our faces to the future. What does the future hold? Let's ask ourselves first what is the future of medicine, not in the South alone, but in the entire United States. Will the world leadership attained by American medicine during the past quarter century be maintained? Will the American physician continue to enjoy the initiative and freedom of action which is so important to his efficiency, and which is in large part responsible for his rapid advancement? Or, in the prevailing search for social security, will governmental control be extended to the practice of medicine, to dampen the enterprise and becloud the brilliance of American medicine? This has occurred in other countries. Will it be repeated here? Many specious arguments are offered for the State control of medicine, but the overwhelming majority of American physicians, men who are in a position to understand most clearly the needs of the patient, have expressed through the *American Medical Association* their well considered opinion that such control would be grievously hurtful to medical practice and, therefore, to the welfare of the American people. As has been aptly said, security for the doctor means insecurity for the patient. The medical profession does not seek security. To security under bureaucratic control, it prefers insecurity, with unhampered freedom of action and the discipline that comes with private practice.

I do not believe that this change will occur. I believe that as better times overtake us the danger of State control of the practice of medicine will recede and that the physicians of the United States will continue to enjoy their professional independence. I hasten to add that this does not mean that the practice of medicine is static and that no change whatever in method of organization or type of practice can take place. Far from it. The practice of medicine is in a constant state of readjustment and changes are gradually and inevitably taking place, but such changes are evolutionary; they are the result of orderly development, not of legal enactment. As these

evolutionary changes proceed the South will have its share in their realization.

To predict the trend of these changes is difficult, but we can envisage some of them. The continued maintenance of the high standards of American medicine will depend above all else upon one thing—upon the character of the men who are today entering upon the study of medicine. The medicine of the future can reach no higher than the character of the student of today. Medical schools have come to realize this and in their scrutiny of the man who applies for admission they look today not only at his educational equipment, but also, and sometimes chiefly, at the stuff of which he is made. His personal attributes, his qualities of heart as well as of mind, and his character are all closely scrutinized. Not only this, but the type of men who constituted his forebears and their standing in their respective communities are taken into consideration. This realization of the modern school that the material of which the boy is made will count heavily in determining his value as a student and as a physician promises much for the future of medicine, and since it is notable that Southern boys of an exceptionally high type are now entering medicine I believe that this trend will bring especial benefit to the South.

To this should be added the fact that the elevation of educational standards that has been accomplished in the United States within the past two decades has been especially noteworthy in the Southern states. Because of meagre endowment the Southern schools of the past often suffered from gross lack of equipment and a serious inability to attract the best talent. But this no longer obtains. There have been developed in the South within this period some five or six of the best medical schools in the world, and this gives assurance that no longer will the most ambitious and enterprising of the young men find it necessary to go east for the study of medicine, in many instances to be forever lost to their native section. Now, those men being able to secure in the Southern schools inspiration and unexcelled training, are much more inclined to remain in the states of their birth and to give to the Southern people the benefit of their skill.

It is encouraging, too, that improved economic conditions promise to the Southern physician greater leisure and, therefore, a wider opportunity for the development of his talents. Although hardship may sometimes serve to develop character and to bring to the surface the best there is in the man, it does not facilitate the acquisition of learning or of culture. Paved roads have taken the place of mountain trails, and long exhausting journeys in horse-drawn conveyances or by horse-back have been replaced by comfortable automobile trips completed in infinitely less time. Then, too, there is an improvement in the economic status of the individual physician. Because of all of this it will not be necessary in the future for him to work quite so hard, and at last it is possible to envisage a state of affairs in which he can find a certain amount of leisure. No one will be so bold as to say that without leisure there can be no culture, but we can all agree that the development of culture is greatly facilitated by leisure. Culture is one of the things we expect to find in the accomplished, useful physician and if the medical profession of the South is to attain its highest usefulness it must be made up in large part of cultured men. This will be the case, I believe, to an even greater degree than in the past.

At this time when medicine only too often is being practiced with machine-like precision there is the danger that the physician will cease to use his well trained human senses and will come to rely largely upon instruments of precision. Likewise there is the danger that in treatment he will accept mechanized, stereotyped procedures and will overlook the fact that a prerequisite to all successful treatment is an appraisal of the patient's personality and a sympathetic understanding of his problems. Combating this tendency toward the mechanization of medicine, however, is another movement in exactly the opposite direction. The enlightened physician of today is coming more and more to look upon the patient, not as an aggregation of tissues and organs each of which may be expected to respond to external influences with almost mathematical precision, but rather as a human being with an infinite variety of psychic and emotional reactions. He studies and, as best he can, guides these reactions. The man him-

self comes first, and the useful physician of the future will be the man who can see in his patient the truly human values. I hope I shall not be accused of rank chauvinism, when knowing the Southerner as I do, his easy approach and his thoroughly human qualities, I hazard the opinion that he is the type of man who can most successfully meet these requirements. He, I respectfully submit, is best fitted by nature and by temperament to practice medicine as we believe today that it should be practiced.

It should not be forgotten, however, that a cold calculating world measures the value of the medical profession of any section by its contributions to science, and when we come to consider what the medical profession of the Southern states will in the future contribute to human progress, we must think not only of the physician himself but also of his opportunities for research. Many brilliant contributions to medical science have been made by men working in obscure places with meagre equipment and the South will in the future, as in the past, always provide great physicians who from the bedside will tell of observations that are of far reaching import. But it is from the laboratories of the great teaching institutions such as Emory University, that most of the great discoveries will come. To attract the best and most brilliant teachers the universities of the South must not only pay adequate salaries, such as will permit the worker to carry on his teaching and his research with a mind that is free from economic cares, but it must provide also well equipped, adequately supported laboratories. This demands liberal endowment. Such endowments have been lacking in the South, but it is hoped that this will not always be true: The magnificent thing that has signalized American capitalism has been the fact that when an immense fortune has been accumulated, its owner as a rule begins to give it away, not lavishly and foolishly, but wisely and for the benefit of the race. Enormous sums, be it said with pride, have been given for research to the universities of the United States. We hear it predicted that hereafter the accumulation of capital will be well nigh impossible and that, therefore, there will be no more great philanthropies. I hope that this prediction is not true, for it is the fond belief

of all of us who are interested in the progress of science and in the welfare of the race that as the South grows in material resources and as this section accumulates capital its great universities will benefit by increased endowment. As this takes place we can expect contributions to medical science in ever increasing amount.

Such research can profitably be devoted in part to the problems that are peculiar to the South itself. Malaria and hookworm are now thoroughly understood, but there are many nutritional disorders, vague and as yet poorly defined, that demand further study. Nutritional edema, sprue and pellagra still present many unsolved problems. But these are not the only nutritional diseases from which the Southern people suffer. There are many other deficiency disorders which interfere with the happiness and usefulness of a large part of the population, and which as yet are ill defined and poorly understood. Many research workers are today busily engaged in studies in this field and we confidently expect important results to come from this work. It is to be hoped that Southern capital will recognize this opportunity for benefiting the human race.

Finally, hoping that it may serve as an inspiration to Southern youth, I should like to give you a picture of the esteem in which a Southern doctor was held not only in America but throughout the entire world. I wish to tell you of the funeral of Gorgas. General Gorgas was in London, on his way to South Africa at the request of the British Government to study the yellow fever that infested the west coast of the Continent, when, weary and worn, he peacefully passed away. The King and the Government ordered a State funeral at St. Paul's with every military honor, a funeral such as only the British know how to give to their heroes. The whole nation mourned, and all of the great papers paid affectionate tribute. This is what one British editor wrote:¹

"And the other day he rode up Ludgate Hill, sleeping his last sleep on earth, wrapped in the Stars and Stripes. There were thousands of men and women and children standing still, there were hundreds of men in khaki passing by, there were ambassadors and other great people and the lonely woman who was on her way with her hero to conquer disease when death took him from her. And there was the riderless horse. All

these came up Ludgate Hill, and as the sun poured down on this ancient way, our hearts and ears throbbing with the solemn music of the Dead March, we knew that we were looking on the passing of a man whose name would shine for ages in the history of our race. It seemed good that death could find him here, for so there came our opportunity to do a great man honor. He passed through the great door through which the sun streams into the nave of St. Paul's, and there he lay with Nelson and Wellington and all that mighty host who came this way and passed into the universe. They will take him to his own land, but in truth he belongs to us all. He was one of life's great helpers, for he cleaned up foul places and made them sweet, and now he belongs to the ages."

That was a Southern physician.

¹Quoted by Hon. Lister Hill in a speech before the Congress of the United States, March 28, 1928.

A NEW PHASE OF INTESTINAL ALLERGY*

M. A. EHRLICH, M.D.
Bainbridge

While going over my records of *rectal prolapse* in infants and children I was impressed by the fact that this condition so often occurred in allergic families and that the patients had allergic symptoms at the time of the examination or developed them later. I decided to test allergically some of those patients whose personal or family histories presented symptoms of allergy.

The results of this investigation will be briefly presented, so that others may follow up this work. They tend to show that in many cases of an intestinal disturbance familiar to any physician treating small children, its real cause may be determined by the allergic method of testing. It seems to me of great importance to look for new findings in this field.

Intestinal disturbances are the cause of a large percentage of deaths in infants and any new information that may be of help in treating them should be welcomed.

The United States Bureau of Census, 1931, lists diarrhea and enteritis as causing 23.5 per cent of the deaths in the first year of life, exclusive of stillbirth; and we all know that rectal prolapse and rectal relaxation would carry a still higher death rate were they listed separately.

In the present survey no attempt will be made to describe in detail the pathologic findings in the cases reported, nor to differentiate the various forms of intestinal upsets. Patients in whom the rectum was relaxed and the intestinal mucosa was seen when the bowels acted will be referred to as cases of *rectal prolapse*. Those patients showing the rectum relaxed but in whom the intestinal mucosa can not be seen will be referred to as cases of *rectal relaxation*.

The small number of cases reported is not due to the scarcity of the disturbance, but to the fact that in connection with these particular patients certain circumstances were present that permitted more positive deductions.

First, those patients who had not responded to my ordinary form of treatment for a period of from seven to fourteen days.

Second, a definite allergic history could be obtained either in the child or in his immediate family.

Third, those patients who were neither too dehydrated nor too weak to be tested.

Fourth, the mental capacity of the parents was such that after the purposes and aims of the new procedure were fully explained to them and understood by them, I could depend on their strict adherence to instructions.

Fifth, all the patients could be tested by good daylight.

I shall not go into a discussion of allergy nor will I burden the reader with references to cases of intestinal allergy that have been reported by other allergists; I want, however, to mention the fact that I have been unable to find any reference to either rectal prolapse or rectal relaxation in those reports. As the technic of the allergic tests is undoubtedly familiar to you, a description of it will be omitted. I shall only say that the intradermal method was used, and both minor and delayed reactions must be taken into consideration.

Tests were made for every article of diet that the child ate or could receive from its mother's milk. Children on the breast were tested with extracts of everything that their mothers were eating. Children not on the breast were tested with everything that they were eating. Children on the breast and on other foods were tested by a combination of

*Read before the Medical Association of Georgia, Savannah, April 23, 1936.

both methods. In some patients tests were also made for contacts and some were further tested for food to determine a suitable diet, so that they could be properly fed. These last always gave negative reactions.

Following are ten cases, presented as briefly as possible:

Case 1.

White male, aged 1 year, 2 months, 5 days. Mixed feeding. About 20 stools daily, mucus, green, straining, blood present. Rectum relaxed and prolapsed.

Allergic history: Father's father had had asthma. Tests were positive to *milk*. Elimination of milk cleared the condition in four days. Later caused purgation by feeding milk.

Case 2.

White male, aged 1 year, 5 months, 1 day. Mixed feeding. Frequent stools, mucus, green, blood, and severe cramps. Rectum relaxed.

Allergic history: Father had asthma and hay fever. Father's sister had asthma. Brother had urticaria. Tests were positive to *tomato*. Elimination of tomatoes checked the bowels in three days and stopped the cramps in six days.

Case 3.

White male, aged 11 months, 25 days. Breast feeding. Frequent stools. Mucus, green, straining, odor and pain. Rectum relaxed and prolapsed.

Allergic history: Brother died of rectal prolapse. Mother's brother's child had enteritis (possibly allergic). Tests were positive to *tomato* and several kinds of *beans*. Elimination of beans and tomatoes from the mother's diet checked the patient's bowels in five days. Later, purgation was caused by giving the child tomatoes.

Case 4.

White male, aged 1 year, 11 months, 13 days. Not on the breast. Frequent stools, mucus, green, loose, odorous. Rectum relaxed.

Allergic history: Patient had asthma. Mother had contact dermatitis. Tests were positive to *pork*. Elimination of pork checked the bowels. Later, bowel upset was caused by eating canned meat, which no doubt contained pork.

Case 5.

White male, aged 1 month, 23 days. Breast feeding. Twenty to thirty stools a day, mucus, green, bloody, straining. Rectum relaxed and prolapsed.

Allergic history: Patient had eczema. Mother's sister had contact dermatitis due to face cream. Father's brother had allergic rhinitis. Father's brother had headaches. Father's brother's child had headaches due to dog epithelium. Father's sister's child had hay fever due to ragweed and cocklebur. Tests were positive to *sweet potatoes* and *Irish potatoes*. Elimination of both potatoes from the mother's diet checked the bowels in four days. The eczema improved and later cleared. Later, purgation was caused on several occasions with a return of the eczema by giving the mother sweet potatoes, also by giving the child sweet potatoes. By giving the mother Irish potatoes purgation was caused but without a return of the eczema.

Case 6

White female, aged 8 months, 4 days. Breast feeding. Fourteen to twenty stools daily, mucus, yellow, blood, and straining. Rectum relaxed and prolapsed.

Allergic history: Patient had had urticaria. Tests were positive to *rice*. Elimination of rice from the mother's diet checked the bowels in four days.

Case 7

White female, aged 3 months, 15 days. Breast feeding. Five to seven stools daily, loose. Fever.

Allergic history: Mother gets sick after eating fresh tomatoes. Tests were highly positive to *tomatoes* and slightly positive to *oats*, *rice*, *milk* and *pork*. Elimination of these foods from the mother's diet checked the bowels and stopped the fever. Later, purgation was caused by giving the child tomatoes.

Case 8.

White male, aged 9 months, 2 days. Diet for the past ten days was only orange juice, prunes and milk. Weight, 10 pounds. Normal weight for age, 20 pounds. Loose and frequent stools all of life. Vomiting and abdominal cramps all of life. Very severe croup for two days.

Allergic history: Twin brother died one week before. Brother always unhealthy, vomiting, with loose stools, underweight. (Said to have been smaller than the one I saw.) Father's brother died of colitis. Father's mother had asthma. Paternal great aunt had asthma. Mother's brother had croup. Tests were positive to *milk* and *orange*. Elimination of milk and oranges from the diet checked the bowels in two days. The croup gradually became better, and at the end of a week the child was practically free of it, even when made to cry.

Case 9.

White female, aged 1 year, 5 months, 23 days. Diet for the past 12 days was only orange juice and butter-milk. Seven to ten stools a day, green, mucus, blood, straining. Rectum relaxed.

Allergic history: Sister had asthma. Patient had had urticaria. Father had catarrh of the nose and chronic indigestion. Father's brother had chronic indigestion. Tests were positive to *milk*. Elimination of milk checked the bowels in six days.

Case 10.

White female, aged 8 months, 7 days. Bottle feeding, orange and tomato juice. Twenty to 25 stools daily. Mucus, green, blood, fever and straining. Rectum relaxed and prolapsed.

Allergic history: Brother had rectal prolapse. Father had urticaria. Mother's brother had urticaria. Mother's maternal father had eczema. Tests were positive to *oranges* and (delayed positive) *milk*. Elimination of oranges checked the bowels to 6 to 8 times daily; and upon elimination of milk also, the bowels became normal. Later purgation was caused by giving both orange juice and milk on different days.

SUMMARY OF FINDINGS

Feeding: Breast alone in four cases. Breast and other foods in two cases. Very restricted diet in three cases. Regular diet in one case.

Bowels: Rectal prolapse in five cases. Rec-

tal relaxation in three, loose bowels in two.

Associated conditions: Eczema in one case; cramps in one case; fever in two cases; vomiting, cramps and underweight in one.

Past personal allergies: Asthma in one; urticaria in one.

Purgation: Produced in six cases by including in the diet foods given positive skin reactions.

No definite conclusions should be drawn from such a limited number of cases. Nevertheless, one might be justified in concluding that although allergic treatment is not a panacea in the treatment of *rectal prolapse* and *rectal relaxation*, a careful study of each individual case and the application of the knowledge so gained may be rewarded with a success commensurate with the efforts put forth.

Further investigation by others may or may not prove that all cases of rectal prolapse and rectal relaxation are allergic, but this investigation leads me to conclude that they are allergic in these cases with positive allergic histories.

CONCLUSIONS

1. Allergic enteritis is much more common than we care to acknowledge.
2. Allergic enteritis may be of any degree of severity.
3. Allergic enteritis may be diagnosed by tests.
4. Allergic enteritis clears up when the offending substances are eliminated.
5. Allergic enteritis may be caused by foods given to the child or it may pass through the mother's milk without causing symptoms in the mother.
6. Feeding small quantities of the offending material will cause purgation, and possibly the feeding of larger quantities, or feeding over a long period of time, may be the cause of even the most severe cases.
7. Rectal prolapse and rectal relaxation are the severest types of allergic enteritis, with the former a more severe degree of the latter condition.
8. Allergic methods of treatment will no doubt decrease infant mortality in intestinal disorders.

Discussion on Paper of Dr. M. A. Ehrlich

DR. CLARENCE L. LAWS (Atlanta): These observations which Dr. Ehrlich has made are very inter-

esting and original. They leave no doubt at all that his patients were saved by the realization that the underlying cause of the symptoms was an allergic condition. We have been accustomed to associate for a good many years such conditions as asthma, hay fever, sometimes urticaria, with an allergic etiology, but the allergic basis for a good many gastro-intestinal disturbances has not met with such wide acceptance. There are probably many reasons for this, but one of the most important has doubtless been the inadequate methods of testing which we have had at our disposal. In the earlier days of this work, nearly all the skin testing was done by the scratch method. This is still satisfactory in the case of pollen and miscellaneous inhalants, but it certainly is inadequate in the case of foods, unless that individual has a very sensitive skin and gives violent reactions. With a wider use of the intradermal method it was found that nearly all allergic individuals gave positive skin reactions to one or more foods. This does not mean that a positive skin reaction to a food has any clinical significance whatever. It simply means, as Henry has stated, that somewhere in the past that patient has suffered as a result of that substance or at some time in the future he may be bothered by that food sensitivity.

The latest work that has been done along this line has been done by Vaughan, and other workers have later followed it up, with the use of the leukopenic index. Briefly, this means that the suspected food is fed to the individual, and at intervals of about thirty minutes leukocyte counts are made. If the food is allergically important, if it is a producer of symptoms, there will be a fairly marked leukopenia occur over a period of thirty minutes to an hour. By the correlation of the positive skin tests and the use of the leukopenic index, very brilliant results have been obtained in the treatment of gastro-intestinal disturbances and also in migraine.

There is no doubt that food sensitivities are more important in childhood than at any other time. I think if that were thoroughly understood a good many needless surgical procedures could be avoided. It would be interesting to study the records of a series of allergic children under the age of ten and see how many of them had had their appendices removed, and I feel sure that the ratio would be high.

DR. M. A. EHRLICH (Bainbridge): I want to thank Dr. Laws for his discussion of my paper, and I want to add the following case which I worked out subsequent to the time I wrote this paper.

A white male, aged 7 months, 10 days. Allergic history positive on both mother's and father's sides. Twenty to thirty stools a day, mucus, green, blood, curd, odor and very watery. There was a rectal prolapse present. Tests were positive to *milk*. We eliminated milk from the diet and the child rapidly became better, but is not entirely well.

As I look upon these cases, the fact that after eliminating the food the child rapidly became better, and the fact that when we gave the child the same food that was positive to the skin test it produced a purgation, leads me to believe that it is an allergic condition.

HISTORY OF HYSTERECTOMY WITH A REVIEW OF HYSTERECTOMIES PERFORMED IN THE JOHN D. ARCHBOLD MEMORIAL HOSPITAL*

ARTHUR D. LITTLE, M.D.

Thomasville

In this review I expect to give the number of operations of all types of hysterectomies at the John D. Archbold Memorial Hospital, with a comparison of mortality. I will attempt to give the indications for the operation as well as a brief history of hysterectomy. My object is to attempt to learn just what technic and types of operations have proven the most successful from the standpoint of mortality and cures.

I am unable to give accurate data as to the cures in this series as I have not conducted a thorough follow-up of all cases; however, I have been following the malignant cases and our territory being limited, I usually hear from any case that does not do well.

The history of hysterectomy forms a basis for a romance in surgery and it is the intent of the writer to cover in a brief manner that phase of the subject. It is interesting to note that vaginal hysterectomy was performed in the dark ages, usually for either an inversion or a total prolapse and, since anesthesia, asepsis, ligatures or clamps were unknown, we are forced to admire the heroism of both the doctor and the patient. Of course, the mortality was about 100 per cent, but credit must be given for the effort. The most successful method tried in the Seventeenth Century seemed to be the seton, and just why this did not suggest the ligature it is difficult to understand.

From 1794 to 1799 there were scattered reports of vaginal hysterectomies from various points in Europe. From 1800 to 1816, Brandelcocque, of Paris, performed 23 partial or total vaginal hysterectomies. All of these were for inverted or prolapsed uterus, although malignancy of the cervix was well known long before this date, and the vaginal speculum was a well known instrument in the dark-ages (Galien, who lived in the Second

Century, A.D. mentions it), but it was forgotten or discarded for a number of years only to be rediscovered by Ambrose Paré and Scultetis in the middle of the Seventeenth Century. It remained for Osiander, of Gottingen, Germany, to popularize this instrument in 1808. Osiander performed vaginal hysterectomy in 1801, eight years after he suggested a method or technic, and he readily recognized and removed uterine polyps and carcinomatous growths from the uterine cervix.

The first deliberate and planned vaginal hysterectomy for carcinoma was made in 1813, by J. C. M. Langenbeck of Gottingen, the uncle of the distinguished surgeon B. von Langenbeck. The patient was a Mrs. Oberschein, aged 50, the mother of several children. Her general health was only a little impaired. The uterus was prolapsed and the pain intense. On examination the cervix showed: a stony hardness, nodular and ulcerated; there was a sero-sanguinous foul smelling discharge, a typical picture of carcinoma.

The operation was performed in the following manner: The patient was placed across the bed with the pelvis on edge of bed, the thighs well separated and feet resting on stools. The vagina was dissected away from the uterus, keeping the knife toward and in close contact with the uterus, the dissection continued up to the peritoneum but care was taken not to open the peritoneum; the fundus was resected subperitoneally, but the broad and round ligaments, as well as the tubes, had been cut and the hemorrhage was so profuse and the patient collapsed so rapidly that something had to be done, and the assistant being old and gouty and of no practical value, Langenbeck was forced to grasp the bleeding parts with his left hand while with his right hand he passed a needle armed with a suture and, using his teeth, he drew the ligature tight and tied it securely and thus was accomplished the greatest step yet taken in rational technic of vaginal hysterectomy. A sponge was packed into the vagina, and the patient made an uneventful recovery, and surgical history was made. Please remember: no anesthesia, no clamps, a useless assistant, no asepsis, no worth while precedent for the operation, and we begin to grasp the magnitude of the undertaking and almost add our own per-

*Read before the Medical Association of Georgia, Savannah, April 24, 1936.

spiration to that of the bold operator who must have exuded it in great quantity.

John Collins Warren, of Harvard, in 1829, did the first authenticated vaginal hysterectomy in America. The patient died on the fourth day. Several other surgeons followed Warren with uniformly bad results and the operation was abandoned until some years later when clamps and ligatures came into common use.

Vaginal hysterectomy has continued to be a popular type of hysterectomy and is preferred by many modern surgeons in selected cases.

It was in 1843 that we have a record of the introduction of abdominal hysterectomy when Heath, of London, opened the abdomen because he thought the woman had an ovarian cyst, and did the first hysterectomy for a fibroid uterus. He passed ligatures through the cervix below the fibroid and tied one on each side, including the broad ligaments. A year later, Charles Clay, also of England, removed both ovaries and the entire uterus of a patient through an abdominal incision. He tied a ligature of Indian hemp about the vagina below the cervix. This patient survived the operation and was doing well when on the fifteenth day she fell out of a high bed which brought on a secondary hemorrhage, and she died. Clay repeated this operation in 1863 except he did a subtotal hysterectomy. This patient recovered and this was the first operation of its kind established as a cure in the British Dominion. In 1867, Byford, of Chicago, as well as many other noted surgeons the world over, were condemning abdominal hysterectomy in no uncertain terms and the vaginal operation was rapidly coming back into vogue. This was largely due to the work of Pean and his written description of the use of clamps that were left clamped on the broad ligaments for 48 hours when they were carefully removed. Pean did sixty such operations before making his report and the profession was so impressed that abdominal hysterectomy was limited to large fibroids which could not be delivered through the vaginal canal, but in 1880 we find Bilroth, Wickuliez, Freud, Spencer Wells, Schroeder and others doing abdominal hysterectomies, using clamps and ligating the vessels, and the greatest step at that time was

made by Schroeder and Spencer Wells when they covered all raw surfaces with peritoneum and dropped the cervical stump. However, the mortality in vaginal hysterectomies had fallen below 10 per cent and the abdominal route was again abandoned as the mortality rate in this type was around 70 per cent.

Howard Kelly, of Baltimore, thought he had originated a new procedure when he covered the cervical stump with peritoneum and dropped the stump back into the pelvis, being unaware that that had been done eight years previously by Schroeder and Spencer Wells. Nevertheless, Kelly, through his prolific writing, teaching, and surgical skill, probably did more than any single surgeon to place abdominal hysterectomy on a firm surgical basis, and this type of operation has never again been discarded; for Kelly established a mortality rate of 5 per cent in subtotal abdominal hysterectomies in a large series of cases.

In 1890, Jos. Price, John B. Deaver and Edward Martin, of Philadelphia, John B. Murphy, A. J. Ochsner, of Chicago, John Wyeth, of New York, the Mayo's, of Rochester, Minn., Ernest Lewis and Rudolph Matas, of New Orleans, and many others were rapidly bringing to perfection the technic which we employ today and, while progress was being made in all types of general surgery, hysterectomy seemed to be the one operation that was making surgery preeminent in this country, which finally culminated in establishing the United States as the surgical center of the world, taking away century-old prestige which had been enjoyed on the Continent and the British Isles. The remarkable thing about surgery in this country is that development has not been confined to the larger centers as many of our most noteworthy advances have been made by surgeons of small communities, Crawford Long, Marion Sims, William and Charles Mayo being the most notable.

Three types of hysterectomies have become universally standardized; namely, vaginal, subtotal abdominal, and total or pan-hysterectomy, each having its place and being indicated in certain pathologic conditions. There is, of course, the individual preferences of the surgeon for a certain type. The writer, for instance, prefers to do vaginal hysterectomies for total prolapse while another sur-

geon might prefer an abdominal type for the same condition. In doing hysterectomies for uterine fibroid it is very seldom that the writer does anything but a subtotal, taking pains to take care of any lesion of the cervix, and paring out the cervix from above. Others prefer to do totals for the same conditions.

There is a difference of opinion also in the treatment of early carcinoma of the cervix, some preferring radium and deep therapy to total hysterectomies. So far as we are able to learn, the cures in the ones who survive are practically the same; the mortality rate for radium and deep therapy is zero, while the mortality rate in total hysterectomy operations is around 9 per cent, with a high morbidity rate and permanent pathologic lesions in the ones who survive the operation. We think these facts would settle the procedure of choice for all time.

This may not be true of some individual operators, but we must consider the technical skill of the average surgeon. Another condition concerning the correct procedure to be followed is that of bilateral salpingitis with endometritis. Should we do hysterectomies in all cases where we do bilateral salpingectomies?

The chief argument for hysterectomies in this condition is that since the tubes have been removed there is no reason to conserve the uterus. That, in my opinion, is a poor reason in that most salpingitis is found in comparatively young women and it has been demonstrated that the interrelation and functional dependence of the ovary and uterus are not one-sided but to a certain extent reciprocal, and it has been proven that the ovaries degenerate much faster following hysterectomy. Polak thought this was due to the disturbance of this interrelation of endometrium

443 HYSTERECTOMIES

Indications for Operation

Type of Operation	Benign Tumor	Cancer of Cervix of Body	Pre-Cancer	Retro-version	P. I. D.	Prolapse	Miscellaneous	DEATHS
Total	8	5	20	1	—	5	6	5—11%
Sub-Total	196	—	—	34	65	—	87	6—1.23%
Vaginal		4	—	—	—	12	—	0

The same thing may be said for subtotal and total hysterectomies, the mortality rate being around 2.6 per cent in the subtotal and around 9 per cent in the total, and we believe that the per cent of cases of cervical malignancy following subtotal hysterectomies, where the cervical lesions were cauterized if present, and properly cored from above, does not justify total hysterectomies. When we then consider the incidence of operative and postoperative hemorrhage, surgical shock, damage to bladder, uterers and rectum, postoperative cystitis, pelvic cellulitis, peritonitis, intestinal obstruction, phlebitis, thrombosis, sustained daily elevation of temperature above 100° F., and the duration of convalescence, it is exceedingly difficult to justify total hysterectomies when all of these possibilities are greatly reduced in the majority of subtotal hysterectomies.

and ovarian tissue, and to the fact that the ovarian circulation is interfered with in hysterectomies and states that when this interrelation was broken that the average life of the ovaries was two years and regarded the retention of the ovaries after hysterectomies of little physiologic value and probably definitely harmful inasmuch as there is a strong tendency to cystic formation and therefore a focus of future trouble.

There are also strong indications that the uterus is not only an organ of gestation but an important organ of endocrine regulation. Everyone agrees that the ovaries should be conserved and if hysterectomies are to be done for endometritis with subsequent damage to these organs, and if it is also true as stated that the uterus has to do with endocrine balance, then we had best go slow on hysterectomies in young women, especially when

many of these cases can be cured by dilation and curettage.

I reviewed the records of the hysterectomies performed in the John D. Archbold Hospital up to Jan. 1, 1935, and, in analyzing the above sheet, find that there were 443 hysterectomies performed. This is made up of 382 subtotals, 45 totals and 16 vaginals. The interesting thing about this analysis is that there were 196 subtotals done for benign tumors, 34 subtotals for retroversion, 65 for pelvic inflammatory diseases and 87 for miscellaneous causes. The miscellaneous causes varied from being done for cesarean sections, a considerable number for moderate prolapse producing cystocele and rectocele, etc. I find that 8 of the totals were done for benign tumors, 5 for cancer of the cervix or body, 20 for precancer of cervix, 5 for prolapse, 1 for retroversion. Of the 16 vaginals, 4 were performed for cancer of cervix or body, and 12 for prolapse. There were 5 deaths in the 45 totals, which is 11 per cent, and 6 deaths of the 382 subtotals, giving a death rate of 1.23 per cent, and no deaths in the vaginals.

I believe that there were entirely too many hysterectomies done for retroversions and pelvic inflammatory diseases, which were 34 and 65 respectively out of the 382. My reason for thinking this has been stated in this discussion. I also believe that the majority of the total hysterectomies should have been handled in a different manner. I think the cases of cancer of cervix could have been much better handled with radium and x-ray. The 8 totals for benign tumor could have been done as subtotals with less risk, and the 20 that were performed for precancer could probably have been handled in some less dangerous manner.

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Discussion on Paper of Dr. Arthur D. Little

DR. CHARLES C. HARROLD (Macon): I am not going to discuss all phases of this paper. I am only going to discuss one phase of it, and that is the question of when we should do the complete hysterectomy

and when we should not, in these fibroid uteri. This question was brought up in July last year at the meeting at Radium Springs. I happened to be presiding at that meeting and the question was discussed and I was very much interested in what Dr. Goldsmith from Atlanta said. He made the statement that he had always been amazed at the infrequency with which malignancy arose in retained cervixes following these hysterectomies. He noticed that I smiled when he said it, and he asked my opinion, and I said I could use almost exactly the same words he used if I would change just one word, and that was that I had been amazed at the frequency with which malignancy arose, rather than the infrequency. The group laughed at me. I went home to Macon, and within less than a month I saw two other cases of malignancy arising in retained cervixes. I have seen four cases within a year.

I hate to differ with the essayist, but I hesitate to agree with him about leaving these cervixes in. I think every case should be studied, and I am making it more and more of a rule to do the complete hysterectomies in my fibroid cases if the cervixes are diseased at all. As I see it, we have to do one of two or three things. We have either got to do more complete hysterectomies or repair the cervixes more completely, or destroy them more thoroughly before the hysterectomy is done.

You men who are doing general work and general surgery do not see many of these malignancies. We men who are treating a great many malignancies are seeing a very large number of carcinomas arising in these retained cervixes. My associate, Dr. Tom Harold, made a statement at Macon, where this was brought up, that he has seen forty or fifty of them since he has been in the work with me in the last eight years. I do not think that is any exaggeration at all. I had one die within the last two weeks. I want you men to be a little bit more radical rather than less radical.

DR. G. T. BERNARD (Augusta): Dr. Little's paper is a splendid contribution to the surgical literature of Georgia.

The first part of the paper reviews in a most interesting manner the history and the development of the technic of hysterectomy. It was altogether enjoyable to have recounted the accomplishments of the pioneers in this field of surgery and one's breath is fairly taken away at the graphic description of Langenbeck's achievement. It really did make surgical history and while we doff our hats to the redoubtable Langenbeck shall we not pause a moment and pay silent homage to the equally intrepid Mrs. Oberschein? It is a pleasure to know that she made an uneventful recovery and it is to be hoped that she lived many years to enjoy the result of her operation.

We of the present generation have had handed to us the perfected operation. We have inherited the results of the pioneers' blood-sweating work and it remains for us to apply the principles and indications for the operation. Dr. Little shows a profound grasp of these principles and the note of conservatism that runs through his paper shows that he fully recognizes the seriousness of the operation and the obligation that is

placed on the surgeon to do what is best, but only what is best for the patient.

In reviewing the cases at the Archbold Hospital there were sixteen vaginal hysterectomies with no deaths, a perfect percentage. Of the total hysterectomies there was a mortality of 11 per cent and of the sub-totals a death rate of 1.23 per cent. I feel that these figures are a credit to the Archbold Hospital and to the State. I doubt though that the results of the average surgeon in or out of the State are so good.

It should be recognized that sub-total hysterectomy is a serious operation and pan-hysterectomy with all its possible complications is a formidable procedure. The indications for both have been well treated by Dr. Little. There seems to me no justification for hysterectomy in pelvic inflammatory disease. I think the author is quite correct in refusing to condone the frequency of this procedure in his own institution. If the condition of the fallopian tubes is such that the operator feels that foci of infection will remain by merely doing a salpingectomy, then the operation of choice certainly is defundation of the uterus—a simple, clean procedure free from the risks of hysterectomy.

Stump cancer developing after sub-total hysterectomy is an infrequent but very real happening. We have a small series of such cases; to be exact, 9 epitheliomas developing in the cervical stump during the last six years. This condition can be certainly prevented if, as a part of sub-total hysterectomy in parous women, an obliterative cauterization of the cervix below and a coning out from above is invariably carried out.

I also think that the hysterectomies done for pre-cancer are open to criticism in that an operation of the Sturmdorff type or destructive cauterization would have met all the indications.

I believe it is now generally accepted that epithelioma of the cervix is best treated with radium and not by hysterectomy.

Quoting from Dr. H. S. Crossen: "The crucial point of attack is not the uterus but the cancer cells along the pelvic wall. These outlying cells must be reached and destroyed or recurrence is certain. Irradiation is the most important factor in attaining success in the attack on the outlying cancer cells. There are exceptional conditions in which operative work with the knife also may be advisable, but whenever used operation should supplement irradiation and not displace it."

DR. ARTHUR D. LITTLE (Thomasville) I thank these gentlemen for their very able discussion of this paper. Our records just do not coincide with Dr. Harold's experience in the development of carcinomas in retained cervixes, although I must say that we do not leave very much cervix when we do a subtotal. We core out the cervix and there is nothing but a fibrous framework left of the cervix. We are certainly not having the developments of carcinoma in the retained cervixes that Dr. Harold mentioned, and I am sure I would know if we did.

Surgeon General Thomas Parran of the U. S. P. H. S., reports that the health conditions in the U. S. have not only been good during the past five years but continue favorable.

SPINAL CORD CHANGES IN PERNICIOUS ANEMIA*

Report of Cases

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Pernicious anemia is, in all probability, a deficiency disease in which there is a lack of the antianemic liver fraction G of Cohn in the livers of patients suffering from this malady. Some students of the disease feel that the fundamental change which brings about this deficiency is an atrophy of the stomach mucous membrane. Apparently the lack of such a theoretical hormone secreted by the gastric mucosa, impregnated in the food and stored in the liver, results in a chronic disease which manifests itself variously, by changes in the bone marrow, in the central nervous system, particularly the spinal cord, and also in the gastro-intestinal tract as a whole. It is important to remember that any one of these three locations in the body may show the effect of this deficiency. Thus the anemia may be the striking feature of one patient, in another patient gastro-intestinal symptoms predominate, with little change to be found in the blood for a long period of time; and in a third group spinal cord changes may be the prominent symptom, with little or no evidence of disturbance in the other two systems. Finally, all three systems may be more or less affected in the same patient. It is thus a mistake to feel that all pernicious anemia patients should necessarily show anemia in the earlier stages of the disease.

I desire to report eight patients with combined degeneration of the spinal cord, due to pernicious anemia, whom I have seen in private practice during the past few years.

The patients fall into two groups. In Group I are three patients whom for various reasons, I have been unable to follow closely, their chief interest being that of diagnosis.

Group II consists of patients whom I have been able to follow more or less closely and in whom, in addition to the diagnostic interest, is the even greater interest of being able to determine the results of present day methods of treatment.

*Clinical presentation before the Fulton County Medical Society, Atlanta, Oct. 1, 1936.

GROUP I.

Case 1. A merchant, 69 years of age, was seen in consultation with Dr. W. L. Lynn of Knoxville, Tennessee, in 1929. He was in excellent health until 1926 when he complained of weakness and loss of appetite. At this time a diagnosis of pernicious anemia was made at the Mayo Clinic, where it was found that the red blood cells numbered 2,430,000; hemoglobin 42 per cent. The test meal revealed an achlorhydria, but there was no evidence whatever of cord involvement. He was placed on liver by mouth and improved, so that in April, 1928, his red blood cells numbered 4,160,000; hemoglobin 80 per cent.

A month before I saw him he noticed weakness and unsteadiness in his gait, and numbness in hands and feet, progressive in severity. These symptoms became so marked that the patient was very much disabled within a month.

The patient was a well nourished man of sallow complexion, with pale mucous membranes. His gait was markedly ataxic, the knee-jerks highly exaggerated, and a bilateral Babinski reflex was present. The legs were quite spastic. There was a definite blunting of sensation in the hands and in the soles of the feet.

The red blood cells numbered 2,980,000; hemoglobin 84 per cent. The red cells showed poikilocytosis, anisocytosis, macrocytes, microcytes and polychromatophilia. Gastric analysis was not repeated.

This was a clear-cut and typical case of combined degeneration of the cord which was pursuing quite a rapid course, but which only made its appearance after pernicious anemia had been present three years. Today this distressing involvement should be prevented. At that time, the administration of liver parenterally was not being used, unfortunately for the patient.

I did not have an opportunity of following this patient.

Case 2. A lawyer, 60 years of age, was seen in consultation in Oct., 1929. This patient's complaints were numbness in the hands and feet, marked difficulty in walking, with unsteadiness in the arms and legs, so that he could not walk at all without assistance.

The patient's color was quite good but he presented a definite glossitis, the tongue being quite denuded of epithelium with a smooth, bright red appearance. He was well nourished.

The knee-jerks were markedly exaggerated; the abdominal reflexes could not be obtained. There was marked weakness of both arms and legs with a very high degree of ataxia and a moderate degree of spasticity. There was a positive Babinski on the left.

The presence of combined degeneration was strongly suspected and blood examination and gastric analysis advised. The patient decided, however, to go to Dr. Barker's clinic in Baltimore where a definite diagnosis of pernicious anemia was made.

Although I have not seen this patient again I am informed that he has made an excellent recovery and again became quite active, following liver therapy.

Case 3. A barber, aged 50, was seen in April, 1930, complaining of numbness of the fingers and weakness of the arms and legs with a sense of heaviness. This

patient, on examination, showed comparatively little. The red blood cells numbered 4,380,000; hemoglobin 82 per cent; morphology of red cells, normal. There was a complete absence of hydrochloric acid in the gastric juice. He remained under observation about one month and then discontinued treatment which he took in an unsatisfactory way. He was seen again on Dec. 2, 1932, showing no variation in his blood count, but with increase of disability. This case illustrates the difficulty in securing cooperation. It was, however, a definite early case of combined degeneration with no change in the blood picture characteristic of pernicious anemia.

GROUP II.

Case 1. A widow, 70 years of age, seen in April, 1935, was sent to me by her physician, Dr. James V. Rogers of Cairo, Georgia. She dated her failure of health as far back as 1929 when she had digestive disturbance characterized by vomiting and diarrhea. Her present complaints, however, had been present only for one year. These complaints were numbness in the fingers and hands, inability to walk, paresthesias in the legs and a sensation of a band about the hip. One of the early symptoms was numbness in the tips of the fingers. Recently there had been some impairment of sphincter control. For some time there had been marked soreness of the tongue.

On examination, the patient's gait was grossly disturbed, showing marked ataxia and spasticity, with weakness of the legs. There was absence of sense of position and vibratory sense from the knees downward, with some dulling of vibratory sense in the hands. The knee-jerks were markedly exaggerated; Babinski was present bilaterally; and on the left, Gordon and Oppenheim reflexes were obtained. Gastric analysis showed complete absence of hydrochloric acid. The red blood cells numbered 2,720,000 and hemoglobin 64 per cent, with morphology of the red cells characteristic of pernicious anemia. Catheterized specimen of urine showed a large amount of pus.

This patient remained in the hospital only long enough for a diagnosis, and was referred back to her physician.

On Sept. 18, 1936, her physician, Dr. Rogers, wrote me that in spite of an attack of malaria in Aug., 1935, and an attack with the symptoms of coronary thrombosis in Oct., 1935, the patient continues to be in reasonably good health, although unable to walk. She has free movement of her extremities, her mental condition is good, and she reads and is able to sit up several hours a day. Except for the omission of liver during her attacks of severe illness, she has been taking twelve capsules daily of Extralin and liver extract concentrate, parenterally, once a week. At the time of her last blood count made on July 27, 1936, her red blood cells numbered 5,300,000; hemoglobin 90 per cent. It is interesting to note that after her cardiac disability and the omission of liver in Oct., 1935, that on Nov. 10 of that year the red blood cells numbered 2,800,000; hemoglobin 65 per cent.

Case 2. A farmer, aged 58, was first seen in Sept., 1933, referred by Dr. L. P. Pharr of Auburn, Georgia. The patient complained that for a year he had noticed numbness in his hands and feet. Recently the numbness

in the hands made it difficult for him to button his clothes. For the past six months there had been gradual increasing difficulty in walking, on account of unsteadiness and weakness of the legs. Otherwise the patient has felt quite well with a good appetite, no indigestion, no sphincter disturbance, and no diarrhea or soreness of the tongue.

On examination, the patient's gait was very markedly impaired so that he had to be supported in walking. The gait was ataxic without spasticity. The knee-jerks could not be obtained. The abdominal reflexes were present. There was a definite diminution of sense of touch in all extremities, of the stocking and glove type. Romberg sign was very marked.

The report on blood examination was very remarkable in that the red cells numbered 4,890,000 and the hemoglobin was reported to be 112 per cent or 16.4 grams per 100 cc. There was very slight variation in the size or shape of the red cells. Gastric analysis showed complete absence of hydrochloric acid.

This patient was placed on liver extract by mouth and on parenteral injections of liver. The treatment was given at home by his physician and he was not seen again until Dec., 1933, when his condition was essentially the same. There was a complete loss of vibratory sense in the lower extremities. He was urged to continue the large amounts of liver extract by mouth, with injections of liver at intervals. He was seen again Jan. 14, 1935, when he walked briskly into the office without difficulty, stating that his numbness had greatly diminished, that he was able to button his clothes without difficulty and had no complaint of his walking. On testing his vibratory sense it seemed to have completely returned. During this past summer the patient's son reported to me that his father was quite well and was plowing in the fields.

Patient was seen at the office on Sept. 30, 1936. It was remarkable to see his complete freedom from disability. During the past summer he went in the surf and had no difficulty in enjoying to the full this diversion. His walking was perfect and he had a complete return of normal sensation. He has continued to take liver by mouth only.

On examination there was a complete and normal sense of vibration, no ataxia in arms or legs, no Rombergism and a completely normal gait.

At this time the red blood cells numbered 4,710,000; hemoglobin 98 per cent. There was very slight variation in the size and shape of the red blood cells.

Case 3. A married woman, aged 29, was first seen on May 30, 1933; referred by Dr. J. D. Manget of Atlanta. The patient stated that six months previously she began to notice a sense of stiffness and weakness in both legs which had gradually grown worse with marked unsteadiness in walking, numbness in the fingers and, to some extent, in the toes, and a loss of ten to twelve pounds in weight. For the past seven or eight months there had been nausea and vomiting at intervals, especially worse for the preceding two weeks.

On examination, the patient was undernourished and presented a smooth, atrophic tongue. Her mucous membranes were not particularly pale. Her gait was

ataxic and spastic. There was a marked exaggeration of the knee-jerks with positive Babinski and double ankle-clonus, with loss of vibratory sense.

The red blood cells numbered 2,555,000; hemoglobin 84 per cent. The red cells showed considerable variation in size, some poikilocytosis, polychromatophilia and basophilic stippling. Gastric analysis showed complete absence of hydrochloric acid.

Patient was put on a full dose of liver extract by mouth and also given liver parenterally. By the latter part of August she had shown definite improvement in walking, with lessening of numbness and spasticity, and no further digestive complaints.

In Dec., 1933, her red blood cells numbered 4,390,000; hemoglobin 94 per cent. The morphology of the red cells was approximately normal. This patient has remained on liver extract by mouth. She was seen at the office in Feb., 1936, apparently in perfect health. She had gained over thirty pounds in weight, had no complaints whatever and appreciated vibration, normally.

On Sept. 17, 1936, the patient was seen at the office stating that she considers her health to be perfect. She has no complaints whatever, does not fatigue, has no abnormal sensations and states that while formerly she had very little sense of touch in the fingers and in walking would frequently step on objects without knowing it, at present these disturbances have completely disappeared.

Her vibratory sense appears to be completely normal; there is no spasticity and no ataxia except that on standing, with the head upward and the eyes closed, there is the slightest degree of unsteadiness. Her weight was 143 pounds on this date.

At this time the red blood cells numbered 4,230,000; hemoglobin 90 per cent. The patient has remained on liver in the form of ten Extralin capsules daily. She has had no liver extract parenterally since 1933.

Case 4. A widow, 74 years of age, was first seen in Nov., 1935; referred by Dr. J. D. Manget of Atlanta. Her chief complaints were inability to walk and numbness in hands and feet, which symptoms were first noted about two years previously. For the past two months she has been growing worse, particularly in her ability to walk, so that walking was impossible without support and she was beginning to lose sphincter control. For the past three weeks there had been a girdle sensation about the hips.

On examination, the patient was quite well nourished. The skin showed a lemon tint. There was very marked ataxia of the legs, with complete loss of sense of position. The knee-jerks were present but diminished. There was no spasticity, or abnormal reflexes. There was complete loss of vibratory sense in legs. The red blood cells numbered 3,330,000; hemoglobin 68 per cent. The red cells show anisocytosis, macrocytosis and poikilocytosis. There was complete absence of free hydrochloric acid in the gastric contents.

In this patient the involvement in the cord appeared limited to the posterior columns.

The patient was given several series of injections of liver extract parenterally with full doses by mouth.

She began to improve, to a certain degree, so that on Feb. 28, 1936, she was able to come to the office and to walk without assistance, although her gait was still impaired. At this time her red cells numbered 4,370,000; hemoglobin 86 per cent. The red cells showed normal morphology. The last report from this patient, through her daughter, was that she went to Florida and later to visit her son in another state and continued to show improvement in her gait.

Case 5. A farmer, aged 60, was first seen in June, 1936, referred by Dr. P. Willson of Newborn, Georgia. The patient stated that his chief complaint was marked difficulty in walking with inability to control his legs since Oct., 1935. He further stated that since the fall of 1934 he had noticed numbness in the fingers and toes which had been persistent but stationary. He had had practically no digestive symptoms and had lost little weight but noticed increasing weakness, and some dyspnea on exertion.

On examination, the patient exhibited a very marked ataxic gait without spasticity, a marked diminution of vibratory sense in arms and legs, and an absence of ankle-jerks and knee-jerks. The skin was definitely of a lemon tint and the tongue was smooth in appearance.

The red blood cells numbered 2,030,000; hemoglobin 53 per cent. Red cells showed poikilocytosis and anisocytosis. There was complete absence of hydrochloric acid in the gastric contents.

This patient was put on large amounts of liver extract by mouth with parenteral injections of the extract, five doses of each series. His physician was advised to repeat such a series every ten days. The second blood count made on July 3, 1936, showed actual diminution, in that the red cells numbered 1,730,000; hemoglobin 55 per cent. The treatment, however, was persisted in, and on July 23, 1936, the red cells numbered 3,420,000; hemoglobin 87 per cent, and there was marked improvement in the morphologic appearance of the red cells. At this time the patient showed considerable improvement in his walking, his dyspnea had disappeared and he was making quite satisfactory progress, generally.

The patient was last seen on Sept. 12, 1936, continuing to show marked improvement in walking although he still steadies himself with crutches. He is now able to walk on level ground without assistance and there has been marked improvement in the numbness in his hands and feet and in touch sensation which, at the beginning, was almost absent. The dyspnea has disappeared and his strength was improving. The sense of vibration has returned and is better appreciated on the right. At this time the red blood cells numbered 4,720,000; hemoglobin 96 per cent.

Comment

There are two points I wish to emphasize, from consideration of these cases.

First, the diagnosis. The patient who comes complaining of persistent numbness in the hands, or in the feet, or both, and which is or is not associated, with difficulty in walking, should always suggest the possibility of pernicious anemia as the under-

lying cause. There may or may not be evidence of gastro-intestinal disturbance, glossitis, pallor or various other symptoms, usually associated clinically with pernicious anemia.

If, on examination, there is absence of free hydrochloric acid in the gastric contents, and loss of vibratory sense in the extremities with or without evidence of spasticity, and disturbed reflexes, or ataxia, it is probably a case of pernicious anemia, irrespective of the blood count. If the blood shows the characteristic changes in pernicious anemia, a diagnosis is quite definite. If the blood does not show changes it may be considered almost equally definite that the patient is suffering from pernicious anemia which has not yet exerted its effect on the bone marrow.

The second point is the method of treatment. For a long time after the introduction of liver, the majority of clinicians were greatly discouraged in their efforts to improve the central nervous system impairment by means of liver therapy. When the parenteral injection of liver extract was introduced, and much larger amounts of liver were given, reports began to appear in the literature of an encouraging nature. Up to this time, this disease had been almost uniformly progressive and fatal, usually within a year or two. Recent study of the effects of treatment in this group of patients seems to indicate that in order to secure favorable results it is necessary to maintain the red blood cells at 5,000,000 per cubic millimeter for a period of at least nine months and later maintain the blood close to this level. In patients who have pernicious anemia, and in whom involvement of the nervous system has not appeared, it is recommended that to prevent the appearance of such involvement, the red cells should be constantly kept above 4,500,000. Starr has emphasized the fact that in his patients with pernicious anemia where the blood count was kept above 5,000,000, involvement of the nervous system did not occur. According to Castle, parenteral injection is sixty times more effective than liver extract orally.

According to Schaller, the degeneration which occurs in the spinal cord is a sub-acute myelin degeneration and liver therapy seems to be potent in arresting and even ameliorat-

ing the pathologic change, provided the patients can be treated with reasonable promptness before irreparable damage has been done to the structures of the cord.

Summary

Case reports and patients have been presented to demonstrate the importance of recognition, and the efficacy of treatment in a disease, which, if not adequately dealt with, progresses to complete disability and death within a few years.

THE FOURTH AND FIFTH VENEREAL DISEASES*†

A Study of 100 Consecutive Cases of Granuloma and Lymphogranuloma Inguinale

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Introduction

We have with us constantly and with ever increasing abundance the fourth and fifth venereal diseases, which manifest themselves as several diverse afflictions of the genitalia, accompanied frequently by inguinal adenopathy and ano-rectal disease. At various stages these affections simulate one another as well as resemble the other venereal diseases, resulting in marked confusion. At times these differ so widely in their own manifestations that many opinions are held as to diagnosis. Witness the long array of terms in use to designate the varied pudendal and anal lesions now regarded as belonging solely to two groups of definite etiology but known as esthiomene, ano-rectal syphiloma, syphilitic elephantiasis and ulceration of the vulva, lupus vulvae, climatic bubo, strumous bubo, ulcerating granuloma of the pudenda, inflammatory strictures of the rectum, and, last, but more accurately, granuloma inguinale and lymphogranuloma inguinale. This descriptive nomenclature is indeed varied and can only attest to the fact that in the history of medicine scientific confirmation has not and

cannot keep abreast with the ever alert and keen clinical description of diseases.

Historical Consideration

The history of venereal disease is old indeed. Prostitution was rife in ancient Egypt. Whether "Baal Peor," the venereal plague of Biblical times, was the same as present-day syphilis is doubtful. In the Smith and Ebers papyri are well defined clinical concepts of gonorrhea. The ancient Hebrews, the founders of prophylaxis and public hygiene, were well acquainted with what must apparently be accepted as gonorrhea and leukorrhea for in Leviticus, chapter 15, this exhortation is found: "When any man hath a running issue out of his flesh, because of this issue, he is unclean . . . and every garment and every skin whereon is the seed of copulation shall be washed with water and be unclean . . . the women also with whom man shall lie with seed of copulation, they shall both bathe themselves in water and be unclean . . ."

As to syphilis, the first official works appeared in 1495. Whether it was brought to Europe from the West Indies by Columbus and his crew in 1493 or was merely a sporadic disease that suddenly took on epidemic proportions always will remain a moot question. In 1530, Fracastorius, a physician of Verona, wrote a poem in the spirit of levity, concerning the shephard Syphilis who, for an act of impiety, was struck by the new disease known as the French pox, which was raging through Europe at that time. The poem became famous and syphilis soon became the universal term.

John Hunter^{1a}, a raw uncouth Scotch lad who came to London in 1748, fonder of taverns and theatre galleries than of book learning, was later to become one of the great surgeons of all time and the founder of experimental and surgical pathology. He found that the knowledge of venereal diseases of his day was sadly muddled. Through biographic descriptions of him it appears that he was a veritable "bull in the china shop" amongst his professional colleagues. Nevertheless, his fellowmen owe him an everlasting debt for he differentiated clearly in his masterful treatise on "Venereal Disease" in 1786 between hard chancre and chancroidal ulcer. To this day the primary lesion of syphilis is known as the Hunterian chancre. However,

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*Read before the Richmond County Medical Society, Augusta, Jan. 16, 1936.

he confused gonorrhea with syphilis, a confusion and fallacy which was to remain uncorrected for over half a century.

Phillipe Ricord^{1b}, born of French parents in Baltimore in 1799, and a graduate of the Paris Faculty, was the greatest authority on venereal disease after John Hunter. This skeptic of the morality of the human race "would have submitted Diana to treatment with his mineral specifics, and ordered a course of blue pills for the vestal virgins." He accurately described gonorrhea in women in 1834. His treatise on the subject of venereal disease is memorable in the history of medicine for overthrowing Hunter's erroneous ideas as to the identity of gonorrhea and syphilis, establishing the autonomy of these diseases.

An English physician serving in India observed a characteristic genital ulceration which he reported in 1882. This condition, first described by McLeod, was named granuloma inguinale by Conyers and Daniels in British Guiana in 1896. Major C. Donovan² demonstrated the organism which he found constantly in patients suffering from this lesion in the Madras General Hospital in India. He considered it a sporozoan similar to the Leishman-Donovan bodies of kala-azar. That the Donovan body is the causative agent of granuloma inguinale is practically universally accepted. However, the nature of the organism has caused great dispute among the investigators and not a few objectives have been hurled at each other. Lynch³ of Charleston, did a brilliant piece of work in isolating and culturing a gram-negative encapsulated bacillus, and felt certain that the Donovan body was that organism. On the other hand, Gage⁴ of New Orleans, felt equally certain that the organism in question was not bacillary but protozoan. As to the etiology of granuloma inguinale, De Monbreun^{5a} of Vanderbilt University, has convincingly allayed all doubts when he successfully infected monkeys with the Donovan organism and then recovered them from the lesions produced. Excellent too, are his studies on the variable morphology and growth of the Donovan body. Goodpasture^{5b} was struck by its cytotropic features and predilection for growth within the cystic spaces of the cytoplasm of the mononuclear cells and resolved that the organ-

ism was a plant parasite rather than an animal one.

This chronic ulcerating granulomatous disease is limited almost exclusively to the genital regions, is seen with great frequency in prostitutes of the colored race, and is apparently venereal in origin, for its transmission to the male so closely follows a history of sexual contact. Then to gonorrhea, chancroids and syphilis a fourth venereal disease, granuloma inguinale, may be subjoined.

And finally, there must be added to this group a fifth venereal disease, the history of which is most fascinating, for its manifestations are at once both curious and bizarre. To unfold its story is to weave together the vivid descriptions of a series of clinical pictures viewed by their respective authors as separate entities but now appear as associated conditions. Truly, like assembling the frescoes of distinguished artists for a great cyclorama, these when viewed separately and at random appear unrelated, but when beheld as one composite whole, present indeed a blended spectacle.

In 1848 Hugier⁶ of Paris coined the term *esthiomene* as an appellation for certain indeterminate ulcerative conditions of the vulvoanal region. Eleven years later his countryman Chassaignac⁷ described types of adenitis of the groin not unlike the condition which in the past two decades has been known as climatic bubo. In 1863 M'Clintock⁸ of Ireland discussed an unnatural hypertrophy of the nymphae and clitoris and the not infrequent association of warty excrescences. In 1875 Alfred Fournier⁹, in his "*Lesions tertiaires de l'anús et du rectum*," presented a syndrome of rigid thickening of the rectum occasionally accompanied by lobulated growths about the anus. The following translation verbatim of one of his conclusions is interesting in that it demonstrates the open-mindedness of the man concerning this lesion. He said: "Having recognized its specificity but ignorant of its intimate structure, I have been led to baptize it simply by the name of ano-rectal syphiloma . . . ; a denomination which might be changed later on, if needs be, for a better one." Fournier evidently did not recognize the elephantiasis vulvae described by his predecessors as part of the same syndrome.



Photograph of a camera lucida drawing x2000 of Donovan bodies within histiocyte. With Wright-Giemsa stain capsules of the bodies are pink, metachromatic bars or nuclei are blue-black. Note superimposed fuso-spirochaetal infection to which usually insufficient attention is given.

In 1896 Godding¹⁰, a surgeon in the English navy, first used the non-committal term 'climatic bubo' to describe an affection with which he had been familiar on the East coast of Africa for twenty years. He associated the disease in Europeans with service abroad. Though he mentioned the superficial abrasive penile lesion and thought it might be the portal of entry of the infection, he did not suggest any association with an infecting coitus. Its venereal origin was first emphasized by Rost¹¹ of Frieburg in 1912. While stationed in the West Indies he made the keen observations that it occurred only among the sailors free to go ashore but never among midshipmen who went to parties under supervision. Durand, Nicholas and Favre⁷ of Lyons, did not realize the close analogy between climatic bubo and the condition which they described as lymphogranulomatose inguinale subague, from which the present day term lymphogranuloma inguinale is derived.

The great milestone in the elucidation of the problem was the test devised by Frei^{13a} in 1925. He prepared an antigen from the pus aspirated from a bubo and by intracutaneous injection of 0.1 c.c. of antigen obtained positive reactions in both climatic bubo and lymphogranuloma inguinale, thus linking these conditions as the same venereal disease. Still more recently evidence has accu-

mulated to show that some other conditions occurring in women, which have been previously totally divorced from lymphogranuloma inguinale or climatic bubo, are part and parcel of the same disease process and have been described under such terms as esthiomene, chronic elephantiasis and ulceration of the vulva, ano-rectal syphiloma and inflammatory strictures of the rectum.

In 1931 Levaditi¹⁴ and his co-workers in France and Hellerstrom^{17a} in Sweden independently isolated the virus responsible for the disease. In 1932 Frei pointed out the value and absolute specificity of his test. In America, De Wolfe and Van Cleve¹⁵ of Cleveland, reported their experience with an extensive trial of Frei's test in 1932 and have not found it wanting in accuracy. In 1933 Stannus^{16a} of London brilliantly reviewed the whole subject of lymphogranuloma inguinale. Unfortunately he calls it the sixth venereal disease having interjected the genital infection by Vincent's as a venereal disease, an entity not at all generally accepted.

In this country these diseases in the past few years have invoked such interest that reports of sporadic or small groups of cases are continually cropping up in the literature, while here in Georgia, in our very midst, these diseases are endemic but it has not apparently attracted much attention if one may judge by the literature on the subject.

Methods and Purpose of This Study

Though the history of the venereal disease has been one of muddled confusion, it has been one of progress. The advances of the past few years have brought about a changing concept in the role of syphilis in genito-ano-rectal diseases and enabled the proper differentiation between the chancroidal bubo and the bubo of lymphogranuloma inguinale. However, for various reasons, time is required before the traditional usage of terms is dropped and new ideas become generally accepted and commonly known. Problem and atypical cases that are difficult of diagnosis continually present themselves, for any one person may have one or several venereal diseases in different combinations and permutations.

The Department of Pathology has undertaken a study of the neoplastic manifestations in several of the venereal diseases, and felt

that before progress can be made, order out of chaos first must be established so that clinical interpretations may parallel pathologic diagnoses and vice versa. The cases manifesting evidence of the fourth and fifth venereal diseases admitted to our wards during the past year have been studied more intensively than in the past. Seventy-five consecutive cases which exhibited any pudendal or inguinal or rectal lesion, were selected in the clinic, regardless of diagnoses. These were each given a number and no diagnosis attempted until all tests were completed. These tests included routine Wassermanns, controlled Frei tests, intracutaneous chancroidal tests, scrapings of ulcerations and aspiration of buboes with routine search made for the causal organisms, particularly Donovan bodies, *treponema pallidum* and *Ducrey bacillus*. From these studies a broader conception of these diseases was obtained and certain deductions made.

The following cases are presented and have been selected from the many cases at our disposal because they are representative of the typical as well as the atypical case. This series is unique in that every type of variegated manifestation of the fourth and fifth venereal disease is represented.

Granuloma Inguinale in Males

Case 1. Simple Granulomatous Ulcer: A colored man, 21 years of age, presented himself at the clinic with an irregularly shaped ulcer 2x1.5 cm. in size on his penis just beyond the coronal sulcus. One week following coitus a small minute nodule appeared which ulcerated and gradually increased to its present size in six weeks. The base of the ulcer was raised above the surface and composed of clean pinkish red granulation tissue. Donovan bodies were present in abundance. Frei test was negative.

Case 2. Fungating Pseudo-Bubo (Inguinal): A colored man, 43 years of age, was admitted to the University Hospital with massive raised granulomatous ulcers in each inguinal region which commenced from small papules two months previously. These followed the appearance of a small "sore" below the coronary sulcus of the penis which healed without medication. Donovan bodies were found in scrapings. Lesions responded well to Fuadin therapy.

Granuloma Inguinale in Females

Case 3. Ulcerative Granuloma of Pudenda with Hypertrophy of Clitoris: A colored female, 22 years of age, was admitted to the University Hospital on Dec. 2, 1935 for the fourth time in two years. Several years before three "blisters" had appeared on the external genitalia which ulcerated and finally but very gradually progressed to the present condition. At each admission she received tartar emetic with consequent healing of lesions but invariably a recrudescence occur-

red several months later. Donovan bodies were found on previous admissions. On her last admission the granulomatous ulceration of the confluent labia was so extensive that the vagina, pubis, perineum and folds of the groin were involved while the clitoris was markedly hypertrophied, measuring 7x3x3 cm. Fuadin therapy as well as tartar emetic failed to bring about a response. Clitoridectomy and a plastic operation on the massive granulomatous right labium majus and minus was done.

Case 4. Ulcerative Granuloma of Genitalia and Extragenital Involvement (perioral): A colored female, 29 years of age, was admitted to the University Hospital with a granulomatous ulceration of the genitalia and an identical lesion of the upper lip. The granulation tissue was heaped up and covered by yellowish crusts. Donovan bodies were found. Under Fuadin therapy the lesions improved rapidly.

Lymphogranuloma Inguinale in Males

Case 5. Inguinal Bubo with Probable Evanescent Penile Lesion: A white man, 23 years of age, was admitted to the private service of Dr. C. W. Crane complaining of fever, general malaise, cough, pain in the splenic region and a mass in the left inguinal region which consisted of multiple glands of varied consistency. He denied any penile lesion. A diagnosis of Hodgkin's disease was entertained because of the fever, malaise, slightly enlarged spleen and mass of left inguinal glands. Biopsy was done and histopathologic study was suggestive of lymphogranuloma inguinale. Frei tests were then performed and these were strongly positive. Intracutaneous chancroidal test and Wassermann were negative. He has responded remarkably well to weekly intracutaneous injections of three different antigens in amounts of 0.1 c.c. of each.

Case 6. Elephantiasis and Ulceration of Penis: A colored man, 34 years of age, was admitted to the University Hospital with elephantiasis of the penis and irregular shaped ulcer 2x3.5 cm. on the shaft of penis. The ulcer was excavating in type with a necrotic moist but granular base. Evidence of old scars in the right inguinal region was present where the patient had had a bubo 18 months previously which had ruptured and discharged through several fistulous tracts for many months. This bubo was not preceded by a penile lesion of which the patient was aware. Frei test was negative. Search for Donovan bodies, *treponema*, yeasts, *Ducrey bacillus*, etc., proved futile. Intracutaneous chancroid test was negative. The Frei tests were then repeated on two occasions with four different Frei antigens and all proved strongly positive, while controls were negative. Then with dramatic suddenness, within one week following these tests, the ulcer, which had been getting progressively worse for thirteen months, cleared up and healed. Should this be regarded as merely a fortuitous coincidence?

Case 7. Ano-rectal Syndrome: A colored man, 27 years of age, was admitted to the University Hospital with a discharging fistulo-in-ano, a large rectal cauliflower-like growth 8 cm. from the anus and ragged ulcerations of the rectal mucosa. Histologic examination of a biopsy from the growth revealed chronic inflammatory granulation tissue. Frei test was positive.

Lymphogranuloma Inguinale in Females

Case 8. Inguinal Bubo with Ulceration of External Genitalia: A colored girl, aged 19, presented herself at the clinic with a left inguinal bubo and ulceration of clitoris, vulva and fourchette as well as discrete well defined moist papules and shallow ulcers on the labia. Fresh smears from the latter revealed the *treponema pallidum*. No Donovan bodies were found in curettings from ulcerated areas and the aspirated pus from the bubo contained no organisms. Frei test was positive.

Case 9. Elephantiasis Vulvae with Ulceration: A colored female, aged 17, was admitted to the hospital with marked elephantiasis and ulceration of the labia. Excision of the labia was performed with good post-operative results. Frei test was positive.

Case 10. Genito-ano-rectal Syndrome. (a) *Pure Rectal Stricture Type:* A white woman, aged 25, entered the hospital suffering from marked constipation for the past four years. Recently she had been passing mucoid and bloody stools. Rectal examination revealed a long tubular stricture which admitted the examining finger with difficulty. Frei test was positive, Wassermann negative. Her husband also gave a positive Frei test and he admitted an inguinal swelling some five years ago. She is being treated with rectal dilatations and convalescent serum prepared from the blood of her husband. (b) *Genito-ano-rectal Type:* A colored woman, age 44, was readmitted to the hospital November, 1935. Colostomy for marked rectal stricture had been performed in 1929. Her blood Wassermann at that time was negative. In January, 1935, cauliflower-like growths on labia and condylomas about the anus were removed. Frei test in December, 1935, was strongly positive.

Case 11. Combined Granuloma Inguinale and Lymphogranuloma Inguinale: A colored woman, aged 23, has had several admissions to the hospital with granulomatous ulceration of vagina, elephantiasis vulvae, and papillomatous growths arising from condylomas on the labia. Scars were present in the right inguinal region, the former site of a fistulous bubo. Donovan bodies were found in ulcerations. Frei test was positive, Wassermann negative. Histologic examination of papillomatous growths removed from labia revealed marked acanthosis with early transition to malignancy.

Conclusion

In concluding, let us summarize certain salient features between the two diseases. Granuloma inguinale and lymphogranuloma inguinale differ greatly. Granuloma inguinale is never attended by a fluctuant or indurated bubo. It is a disease of the skin and corium and not of the lymphatics. It is characterized by a chronic ulcerative destructive granulation tissue that commences from a small macule somewhere in the pudendal region. It grows by continuity and may spread from the groin or perineum onto the abdomen and thighs. Early, the granulations

are pink to red in color and are raised and clean in appearance. After secondary infection sets in, it may be covered by yellowish crusts and takes on an unhealthy appearance with a ropy puriform discharge.

Lymphogranuloma inguinale, a virus disease, is primarily a disease of the lymph channels and lymph nodes. In males, the characteristic bubo follows an evanescent penile abrasion of which the patient is frequently not aware. The bubo has alternating areas of softening and induration and usually breaks down and drains through multiple fistulous tracts. In the female it is characterized by a hyperplasia and hypertrophy of the vulvar tegumentary and subjacent connective tissue layers, concomitant with the local lymph stasis and dilatation of the lymph channels. The surface of such growths may be smooth, rough, warty, polypoid or ulcerated. The ano-rectal component is an inevitable sequel in both men and women when the perirectal glands are involved either by direct or retrograde extension of the infection. Its occurrence in the female is far more common because of the lymphatic drainage from the vagina, the frequent site of the primary focus. In this connection it might be added that the distinguished English surgeon, Lochart-Mummery^{16b}, has expressed his inability to prove that syphilis has caused any of the rectal strictures in the cases seen by him in St. Mark's Hospital for Rectal Diseases. Systemic reactions are present in lymphogranuloma inguinale such as headache and vague abdominal pains. Occasionally they may be so marked, as Manson-Bahr^{16c} pointed out, that a typhoidal state supervenes. Splenomegaly is sometimes met with. A negative Frei test in clinically characteristic cases should be repeated with the same and different antigens, for a positive reaction may be provoked with the second test. (c. f., Case 6.)

RACIAL INCIDENCE

Granuloma inguinale occurs in the Caucasian race but is indeed a *rara avis*. Lymphogranuloma inguinale, on the other hand, is no respecter of persons. Its preponderance in the colored race, however, is overwhelming. In 100 consecutive cases studied, granuloma inguinale claimed 11 cases all in the colored race, 2 of these were mixed cases of both diseases. Of the remaining 89 cases of lympho-

CLASSIFICATION OF GRANULOMA INGUINALE AND LYMPHOGRANULOMA INGUINALE

	Male	Female
GROUP I. Granuloma Inguinale	1. Simple granulomatous ulcer (Case 1). (Most common form).	1. Granulomatous ulceration of genitalia with or without hypertrophied clitoris. (Case 3).
	2. Fungating pseudobubo. (Case 2).	2. (Not uncommon).
	3. Extragenital and Genital Ulceration. (Case 4). (Rare).	
GROUP II. Lymphogranuloma Inguinale	1. Inguinal bubo with evanescent penile lesion. (Case 5). (Most common form).	1. Inguinal bubo with or without ulceration (of external genitalia). (Case 8).
	2. Elephantiasis of penis with ulceration. (Case 6).	2. Elephantiasis vulvae with ulceration. (Case 9). (Most common form).
	3. Ano-rectal syndrome. (Case 7).	3. Genito-ano-rectal syndrome. (Case 10). (Common form).
	4. Extragenital Infection (case reported by Hellerstrom, 17b). (Rare).	
GROUP III. Mixed Granuloma Inguinale and Lymphogranuloma Inguinale	Combinations of Groups 1 & 11 (Case 11).	

granuloma inguinale, 16 occurred in the white race. Of 13 cases in the rectal stricture group, 12 were in females, 3 of which were of the white race.

Treatment

Granuloma inguinale responds very well to vigorous Fuadin therapy but should be carried on long after the lesions are cured or recrudescences will occur. Occasional cases do not respond. Some Fuadin resistant cases respond to tartar emetic. Lymphogranuloma inguinale should be treated symptomatically with nourishing food and copper-iron compound, but its response to Fuadin per se is rather most infrequent. Weekly injections with two or three different Frei antigens in doses of 0.1 c.c. has yielded surprisingly good results in many cases. Buboec, when feasible, should be repeatedly aspirated rather than incised. A short course of arsphenamine treatment might be given in the ulcerative cases of both granuloma inguinale and lymphogranuloma inguinale even in the presence of a negative Wassermann for we have observed that these lesions may be secondarily infected with a spirochetosis or a Vincent's fusospirochetal infection. Topical applications of a cod liver oil-neoarsphenamine-glycerine mixture has proved however far more useful. Surgery should be resorted to for the cauliflower-like condylomas, the vulvar growths and the marked elephantiasis of clitoris or vulva.

The great number of failures and the pathetic condition into which the cases lapse stand out plainly as a challenge to the medical profession—as clearly as the indictment made centuries ago, "Is there no balm in Gilead? Is there no physician there?"

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THE BIPLANE FLUOROSCOPE IN BRONCHOSCOPY*†

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Somewhere Doctor Osler advised the young man in medicine to read old books. If I may assume that you are all young men, I would like to bring to your attention a book published in 1854, which was given me by a past president of this Society, Dr. Dunbar Roy. This book, "A Practical Treatise on Foreign Bodies in the Air-Passages," is by S. D. Gross of Louisville, Ky. According to him, Habicot of Paris was the first to remove a foreign body from the tracheobronchial tree by means of a tracheotomy. This was in 1620. In 1759 Louis brought out an important memoir, assembling twenty-eight cases, including his own and pointing out the importance of early operation. Gross gathered together eighty-three additional cases in which a foreign body was successfully removed from the air-passages by incising the larynx or trachea or both. Professor Eve of Nashville, Professor Dugas of Augusta, and Doctor Kumpe of Alabama were among the other surgeons quoted. Kumpe seems to have been the first to use forceps in exploring blindly the trachea and larger bronchi to retrieve foreign bodies. Gross said, "The calm which ensues after the first paroxysms have passed away varies very much in its duration," and he brought out the deceptive character of this calm. He recognized the importance of repeated physical examinations and emphasized that, once it was known that a foreign body was in the air-passages, the only logical treatment was immediate surgical removal. It would appear that little more progress could have been made in handling foreign bodies in the air-passages with the instruments available to Gross.

However, on November 8, 1895, after most of us young men were born, Wilhelm Conrad Roentgen discovered the ray which has immortalized his name. The medical press in this country failed to appreciate at first the importance of the discovery and on

February 1, 1896, one editor expressed the opinion that it could not be of help if the foreign body were in the thorax. Yet a few months later, White, Goodspeed, and Leonard demonstrated that the localization of a metallic object could best be done by taking plates at right angles to each other, and they removed by gastrotomy an object so localized in the esophagus of a baby. The following year Killian succeeded in removing a bone from the right bronchus through the natural channels, thus bringing to a culmination experiments and attempts along this line for nearly a century. In 1907, Jackson moved the light to the distal end of the bronchoscope, and thus ushered in the modern era of bronchoscopy. His genius and skill, his research and teaching, have made bronchoscopy what it is today.

Although Smyth has referred to using the fluoroscope in bronchoscopy as early as 1912, it was G. W. Grier of Pittsburgh, according to both Jackson and Manges, who first pointed out the advantages of using two fluoroscopes at right angles to each other in removing radio-opaque objects from the lungs. Jackson at once adopted the biplane fluoroscope in his bronchoscopic clinic in Philadelphia, and he has spoken of it briefly in his books and in his contributions to various systems of surgery. Pendergrass made some technical improvements in the biplane fluoroscope for both bronchoscopic and fracture work. He and Pancoast wrote a brief paper on the subject in 1932, to which was appended a note by Tucker. In this Tucker stressed the fact that the biplane fluoroscope, so far from being an adequate substitute for training and skill on the part of the surgeon, demands from the operator a much higher degree of experience and dexterity in removing a foreign body than direct vision bronchoscopy. Last fall Manges published a more detailed paper, but both of these articles appeared in the *American Journal of Roentgenology*, which is probably not scanned by many members of this Society. The *Quarterly Cumulative Index Medicus* reveals but few other titles dealing with the biplane fluoroscope in bronchoscopy, and it has therefore seemed to me a suitable subject for discussion.

It must be emphasized again that it is

*Reprint from the Transactions of the 40th Annual Meeting of the American Laryngological, Rhinological and Otological Society, pages 130-136, 1934.

†Read before the American Laryngological, Rhinological and Otological Society, Charleston, S. C., April 3, 4, 5, 1934.

simpler and safer to remove a foreign body by direct vision. Several years ago Jackson assembled from the literature twelve cases in which the biplane fluoroscope had been used: in eight the foreign body was recovered but three of these patients died; two of the other four died. These tragic results have unduly discredited the technique. In the hands of experts, however, it has been proved again and again that the procedure carries an almost negligible risk. Although unfortunately the biplane fluoroscope can only be used for the removal of radio-opaque objects, when it is needed it is absolutely necessary. When such objects are in the tracheobronchial tree and are of unusual, irregular shape, with cutting edges or sharp points, the biplane fluoroscope is of great value. If the foreign body is beyond direct vision through the bronchoscope, whether on account of its actual location or on account of associated inflammatory processes, fluoroscopic guidance is of course imperative. In the esophagus, open safety pins, large, irregularly-shaped objects or those that have been lodged there for a long time or that are associated with strictures or other pathologic lesions also require the fluoroscope.

When the bronchoscopist is using the fluoroscope he must work in perfect coordination with the roentgenologist, but, as Tucker has so well emphasized, he cannot escape the responsibility of recognizing important vessels by their feel alone and of exercising great gentleness as regards the pulmonary parenchyma. He should insert the bronchoscope as close as possible to the foreign body by direct vision before submitting to the guidance of the fluoroscopist. I have found it a great help constantly to check myself the relationship of the instruments to the foreign body on the screens.

Two cases in which success could not have been achieved without the biplane fluoroscope are presented.

Report of Cases

Case 1.—Pin in a small bronchiole for an indefinite period, causing symptoms simulating those of pulmonary tuberculosis. Removal under the biplane fluoroscope with care.

In the fall of 1930 a child of six years began to have a cough and afternoon fever, and to appear generally rundown. A diagnosis of pulmonary tuberculosis was made and she was admitted to the State Tuberculosis Sanatorium. An x-ray taken there revealed the presence of a pin in the left lung. Since no

evidence of pulmonary tuberculosis was found, she was allowed to go home. She was admitted to the hospital August 3, 1932. Roentgenograms revealed the pin in the lower posterior bronchiole of the left lung. The next morning, with the guidance of Dr. W. F. Lake, by means of a biplane fluoroscope, the pin was localized. By direct vision the bronchoscope was passed and the forceps introduced into the bronchus nearest the pin. No infection was noted in the tracheobronchial tree. However, in order to reach the pin, it was necessary to force the closed forceps downward through the strictured bronchus until contact with the pin was made. The pin was grasped and removed. The operation was accompanied by a moderate amount of hemorrhage which was controlled by the application of epinephrine.

The afternoon following the operation the child complained of pain in the left chest. She was hoarse and spit up a little blood from time to time. There was some impairment of resonance posteriorly with many mucous and bubbling rales. These signs were considered to indicate pneumonitis resulting from trauma and blood clots. Although the next day the rectal temperature rose to 104.2, there was a rapid improvement after this, and five days later x-ray examination of the chest was essentially negative. On the eighth post-operative day the patient walked out of the hospital cured.

COMMENT

Eighty years ago Gross emphasized the period of calm that follows the aspiration of a foreign body, and realized that a metallic object in the lower air passages might cause relatively mild symptoms over a period of years. More recently Jackson has stressed this point repeatedly; he has carried it further to insist that recurrent attacks of illness of the respiratory tract are suggestive of the presence of a foreign body, and insists that every child with a chronic cough should be subject to an x-ray examination. By no other means, I am satisfied, could the presence of this pin have been detected, and obviously it could not have been removed except with the aid of the biplane fluoroscope. This case serves to remind us of the uncertainties attending the diagnosis of pulmonary tuberculosis when the tubercle bacilli cannot be demonstrated.

Case 2.—Bobbin from textile machine in esophagus for thirty months; atresia of esophagus with subsequent gastrostomy. Removal of bobbin by sharp dissection under the biplane fluoroscope with restoration of almost normal deglutition.

A girl, aged seven, was referred to me from another state on January 10, 1933, with the following history:

In the summer of 1930 she had swallowed a textile machine bobbin. Although she duly reported this fact to her parents, no particular attention was paid to her story until after many months they noticed she was having difficulty in swallowing and that she had lost

weight and strength. Two years after the accident the presence of the bobbin in the upper part of the esophagus was discovered by a roentgenogram. Although gastrostomy was performed to prevent starvation and dehydration, her general condition grew steadily worse. Six months later she was brought to Atlanta.

At the first endoscopic examination it was found that the esophagus, markedly dilated for 5 cm., was then completely obstructed with dense scar tissue. The condition of the esophagus was checked by a roentgenogram taken after she had swallowed opaque oil. The plate revealed that the scar tissue separating the upper lumen of the esophagus from the bobbin was 1 cm. thick. Since it was impossible to find any opening through this, it was out of the question to attempt to dilate the esophagus by ordinary measures. To restore a lumen and to remove the bobbin, therefore, required, in spite of the risk, actual cutting through the scar tissue. Laryngoscopic knives were too short to be used through the esophagoscope, so a small Bard-Parker handle was cut down and fused on to a metal rod; a suitable blade completed a satisfactory knife.

Under the guidance of Dr. W. F. Lake, by means of a biplane fluoroscope, I cut through scar tissue until the bobbin was reached. It was then grasped with bronchoscopic forceps, but it was so firmly embedded that additional dissection was necessary to dislodge it. Moderate hemorrhage was controlled by pressure with epinephrine sponges. On account of the resistance of the proximal scar tissue I finally decided to push the bobbin through the relatively normal distal esophagus. After being worked into the stomach, it was grasped with forceps inserted through the gastrostomy wound and removed by Dr. George Fuller in spite of the disproportion between the size of the bobbin and the size of the opening. A string of heavy silk was seized with the forceps which had pushed the bobbin through the cardia and drawn back up through the esophagus. This was left in place as a guide for retrograde dilation.

Convalescence was slow but uneventful and she was allowed to leave the hospital on May 8, 1933. At the time of dismissal she was able to drink freely, although she was still experiencing a little trouble with a soft diet. Her parents did not bring her back for observation and further treatment until March 10, 1934. At that time she had gained twelve pounds and was much stronger. The gastrostomy tube was still in place, but she was swallowing most types of food without difficulty. The family was unable to keep her in Atlanta long enough to institute further dilatation of the stricture. This should of course be done from time to time for a number of years.

COMMENT

This case serves to illustrate again the importance of prompt investigation when a child says that he has swallowed or aspirated some unusual object. If this child had been examined even within a few weeks of the time that she swallowed the bobbin, it could have been removed easily and without danger. The case further serves to illustrate the

necessity for fluoroscopic guidance in two planes when one must remove endoscopically an object which he cannot see by direct vision. It would have been impossible to have located the bobbin, to have cut around it, or to have pushed it into the stomach, without the fluoroscopes.

The case has been of the greatest interest to me in demonstrating how great insult the esophagus can stand. I do not know of the report of any similar case.

SUMMARY

In the very large majority of bronchoscopic cases, a specialist in this line equipped with the necessary instruments can effect the removal of a foreign body by direct vision. This is a simple procedure and avoids the danger of tearing important structures when it is necessary to go beyond the tough cartilaginous walls of the larger bronchi. In those cases in which the surgeon cannot see the foreign body, either because of its inaccessible location in one of the smaller bronchioles or in one of the upper lobes, or because of inflammatory reaction proximal to it, it is necessary to employ the biplane fluoroscope.

The use of the biplane fluoroscope, however, is in no sense a substitute for skill and care on the part of the operator. Without these, the fluoroscope greatly increases the danger of the operation; with these, the procedure is a simple one devoid of risk.

DISCUSSION

GABRIEL TUCKER, M.D., Philadelphia: As an example of what may result from the use of the fluoroscope in bronchoscopy, there is on record a case in which an attempt was made by fluoroscopic guidance to remove a foreign body located in the bronchus by manipulation from within the esophagus, the forceps being advanced under fluoroscopic guidance. This was done by an enthusiast for fluoroscopic guidance who was unfamiliar with bronchoscopic technique. Needless to say, the result was disastrous. A metallic foreign body, and likewise the metal bronchoscope and forceps, appear so clear on the fluoroscopic screen that the whole picture makes the removal appear deceptively easy. In order to be safe, however, it must be done by an experienced bronchoscopist and an experienced roentgenologist.

Foreign bodies that can be demonstrated only on the roentgenograms and not by fluoroscopy may be localized fluoroscopically by placing opaque markers in such a position that the markers will give the position of the foreign body in both the antero-posterior and lateral planes. These markers should be placed so that they are in the proper position when the patient as-

sumes dorsal recumbency, or in other words, the position that is assumed for bronchoscopic removal. Doctors Pancoast and Pendergrass describe this technique very clearly in a paper published by them and myself and to which Doctor Equen has already referred.

I should like particularly to emphasize that—

1. Fluoroscopic guidance in bronchoscopic removal of a foreign body is safe only when it is with biplane fluoroscopic guidance.

2. It is safe and its use is justified only when the bronchoscopist is well trained and the roentgenologist is expert, and the bronchoscopist and roentgenologist have developed careful technique working together.

CHEVALIER JACKSON, M.D., Philadelphia, Pa.: From my own experience I can heartily endorse all that Doctor Equen has said. There are some points that he mentioned that deserve even more emphasis. First, the double-plane fluoroscope, while exceptional for a certain class of cases, does not solve all the difficulties by any means. In the first place the foreign body must be visible, and there are borderline cases where the foreign body is visible in a well-made film but notwithstanding that you cannot see it in the fluoroscope. There is a difference in the visibility of a foreign body on a well-made film and its visibility on the screen. However, we are improving right along in the visibility on the screen.

I have sometimes been very much disappointed in working with pins in the periphery of the lung that were visible anteroposteriorly, both on the x-ray and on the fluoroscopic film. They were visible in the lateral roentgenogram but they were not visible fluoroscopically in the lateral projection.

Apart from visibility there is another matter. Of course, there are probably 25 to 30 per cent of the foreign bodies that we can diagnosticate by the ray that are not visible either on the ray film or on the fluoroscopic screen; but in cases such as those described by Doctor Equen it is absolutely invaluable and nothing will take its place. Otherwise the percentage of failures instead of being one-half of 1 per cent would probably be 4 or 5 per cent.

Another point was brought out very well by Doctor Equen that I think is of the utmost importance, and that is that we must find the lumen for the bronchoscope or for the forceps. One of the nurses said of one of the men who works in our clinic that she expected to see the bronchoscope come out through the ribs. That kind of bronchoscopy with the fluoroscope is almost always fatal. As Doctor Equen has said, we must find that lumen. In the larger bronchi we can find it by direct vision; in the smaller bronchi we must find it by palpation, and we must feel and feel and feel. We can see the forceps, we can see the foreign body, but between them may be, as Doctor Equen has said, vessels and other important structures. We cannot go direct from the position of the forceps to the position of the foreign body, but we must withdraw and find the lumen leading down to that particular foreign body.

In the hands of Doctor Equen, the biplane fluoroscope is safe and is attended with a large percentage of successes. In the hands of one who has never done eye-guided bronchoscopy and who does it guided only by

the fluoroscopic screen the mortality is high.

GABRIEL TUCKER, M.D., Philadelphia, Pa.: The roentgenologist is invaluable, many of us couldn't get along without him, but when it comes to fluoroscopic bronchoscopy the bronchoscopist must have the thing that Doctor Jackson has emphasized so much: the sense of touch. His fingers must be educated and he must be able to feel exactly what he is doing. Even under fluoroscopic guidance a great deal of damage can be done.

RALPH F. DAVIS, M.D., Portland, Ore.: I have had a recent experience that I think may be of interest in connection with this paper. In the Northwest we are so far from Doctor Jackson and his clinic that we have to do something about these cases.

I had a nineteen months' old boy who had a small tack with a small head buried deep in the left lung. The four-millimeter tube would reach within about three inches of it; the three-millimeter suction tube would reach within about two inches of it. I never saw the tack. By the aid of the fluoroscope I was able to engage it by the head, but was unsuccessful in removing it. I made three attempts. I may say that the family of this patient were Christian Scientists, and the tack had been inside for two months before they brought the child in at the insistence of neighbors. I felt that something must be done to vindicate medicine versus Christian Science, and in a fourth attempt, with lower bronchoscopy and the guidance of the fluoroscope, I was able, by rotating the child's body over toward the face and on the side, together with some manipulation of the body at the same time, to get the head of the tack in line with the forceps and engage it and remove it. The recovery was uneventful.

MURDOCK EQUEN, M.D., Atlanta, Ga. (closing): I did bronchoscopy for about twelve years without the double-plane fluoroscope. Then I had a very prominent judge from whose bronchus I attempted unsuccessfully to remove a foreign body. Then I called on Doctor Jackson and with his double-plane fluoroscope he readily removed it. It was then that I became interested in the biplane instrument and that is why we installed it. You may go along and never use it and yet you may have to have it tomorrow. It is one of those things if you need it you need it badly.

Ponce de Leon Eye, Ear, Nose & Throat Infirmary.

FRANK J. JIRKA and CARLO S. SCUDERI, Chicago (*Journal A. M. A.*, July 18, 1936), give the synonyms that have been used for glomus tumor as: angioneuroma, angiosarcoma, Popoff turoms, tumeur glomique, tumeur du glomas neuromyo-arteriel, subcutaneous painful tubercle, angiomyo-neurome, subcutaneous glomae tumor, angioma, perithelioma, false neuroma, glomangiomas and neuromyo-arterial glomus. Clinically a glomus tumor is characterized by a bluish discoloration of the skin, mounted on the top of a small cutaneous elevation. This area is very painful and, when irritated, produces a most excruciating radiation of pain up and down the extremity. More than 50 per cent of them, according to Bailey, are subungual, but almost every portion of the skin surface may be the seat of this lesion. The tumor is benign, and surgical removal produces a simple and complete cure.

THE TREATMENT OF MYASTHENIA GRAVIS*

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Among the numerous patients complaining of muscular weakness and fatigue is a group suffering from a remarkable condition known as myasthenia gravis, or myasthenic paralysis. In this disease fatigability becomes so marked that actual paralysis occurs after even a brief period of activity, with more or less recovery following rest. While it is rare it may be more common than is generally believed, and may easily escape recognition when present in a mild form, or when an early remission occurs. Recent studies have advanced our knowledge of the process involved in this disorder and give promise of more specific methods of treatment.

Symptoms

The fundamental symptom is weakness or paralysis following exercise and fatigue, with a certain degree of recovery after a period of rest. The patient may at first complain of a general tiring and at this time a correct diagnosis is often difficult; frequently such patients are considered psychoneurotic. This stage may last for months. The most striking symptoms are often precipitated by an infectious disease or severe physical strain. These more typical disorders involve chiefly the muscles of the head and neck. First to appear usually is drooping of one or both eyelids, or weakness of an ocular muscle producing blurred vision and diplopia. These symptoms may occur late in the day and be absent in the morning after a night's rest. The muscles involved vary from time to time, producing many unusual types of ocular paralysis, which may change overnight. Although ptosis is the most common of all symptoms, the lid is occasionally markedly retracted, producing a staring expression. In some cases the muscles of accommodation are involved, also leading to blurring of vision on use of the eyes. The facial muscles are later affected, appearing smoothed out with the corners of the mouth sagging; associated with drooping of the lids, this gives the patient a characteristic sleepy and apathetic appearance. There

may be inability to whistle or pucker the lips. Later there is involvement of the muscles of mastication; the patient may be able to eat normally at the start of a meal, but weakness of these muscles rapidly appears and chewing becomes impossible except with frequent rest periods. In advanced cases the jaw may hang open. Similarly, weakness of the palate and pharyngeal muscles produces inability to swallow after a few times, with regurgitation of fluids through the nose. In severe cases this has made tube-feeding necessary. There may be also a marked disturbance in speech, which becomes thick and mumbling after speaking a short time; after a few minutes rest, the speech may again become distinct. If the larynx is affected, the voice becomes progressively hoarse, until the patient can speak only in a whisper. The neck muscles are frequently involved, leading to difficulty in holding the head erect, or in advanced cases, inability to lift the head from the pillow. Involvement of the respiratory muscles may result in alarming attacks of dyspnea, cyanosis and even sudden death, brought on by fatigue. The heart muscle is thought to be involved in some cases. Marked weakness of the muscles of the trunk and extremities does not usually occur until late in the disease, but it may begin here. If severe, the patient may be able to walk only a short distance without falling, recovery occurring after a brief rest. In advanced cases the patient is practically helpless and very little recovery occurs with rest, so that the symptoms are continuous.

Diagnosis

The diagnosis is usually not difficult if the characteristic features of the weakness are considered. The marked fatigability of the muscles may sometimes be demonstrated by the tendon reflexes, which disappear on repeated testing, or by the so-called myasthenic electrical reaction. This reaction may be present in some muscles and absent in others, and consists in a progressive decrease in the amplitude of contraction on rapidly repeated stimuli until contractibility ceases, reappearing after a period of rest. There is no true muscular atrophy and other neurologic abnormalities are absent. Examination of a section of muscle may reveal the presence of lymphocytic infiltrations (lymphorrhages) which are characteristic of the disease. The marked relief in

*Read before the Medical Association of Georgia, Savannah, April 24, 1936.

symptoms following the injection of prostigmin has been shown by Viets¹ to be of diagnostic value. This will be discussed further in considering the treatment of the disease. A detailed discussion of the differential diagnosis of other types of paralysis will be omitted.

Etiology

The etiology is unknown. Females are affected more often than males. While more common between 20 and 50 years of age, children under 10 years and individuals past 60 have been affected. Numerous studies have confirmed the absence of significant lesions in the central nervous system. While a few patients with epidemic encephalitis have shown myasthenic symptoms the relation between the two is probably merely coincidental. The only pathologic change found consistently is an infiltration of lymphocytes in small foci in the skeletal muscles and at times in the heart muscle and other viscera. These infiltrations do not parallel the degree of weakness of the involved muscles. Their significance is not clear. The muscles otherwise show only slight changes, such as atrophy, indistinct striation and hyalin degeneration.

Much attention has been given to the endocrine glands as the source of this disease. Since first described by Weigert² in 1901, the lymphocytic infiltrations in the muscles have often been considered as thymic metastases. This view received support from the fact that Bell³ found the thymus to be abnormal in 49 per cent of cases, a hyperplasia being present in 30 per cent and a tumor present in 19 per cent. Brem and Wechsler⁴ recently reported two cases with thymic tumor, and stated that such tumors are usually moderate in size, encapsulated and without metastasis, unless the lymphorrhages are so considered. They are composed of lymphocytes, plasma cells and polyhedral cells. The tumor may or may not be visible by a roentgen-ray study. Similar cases with thymic tumor have been reported by Alter and Osnato⁵ (thymic granuloma), Mella⁶ (sarcoma) and Gold⁷. The fact that thymic hyperplasia is not present in all cases, and occurs in patients without myasthenia shows that it is not the primary cause of the disease. Lymphorrhages are present in cases without thymic tumor, so that

they cannot be considered as metastases. Cohen and King⁸ studied the association of myasthenia gravis and exophthalmic goiter, and concluded that there was some relation between these diseases. Lymphorrhages have been found in the muscles in exophthalmic goiter, and it is well known that muscular weakness is often present in that disease. Similar metabolic disorders such as diminished glucose tolerance and creatinuria are common to both. Other glands including the parathyroid, adrenal and pituitary have also been implicated. Wechsler suggested that the thymic hyperplasia may be a result of a lesion of the adrenal cortex, which is commonly present. Edgeworth⁹ and others, however, have tried various adrenal extracts without benefit. Simon¹⁰ reported prompt relief in two cases following the use of antuitrin. In spite of these associations Keschner and Strauss¹¹ in 1927 concluded that the endocrine theory did not rest on scientific ground, and there has been no additional evidence indicating a primary endocrine basis.

A number of metabolic changes have been reported in myasthenia gravis. Williams and Dyke¹² in 1922 reported four cases with creatinuria and diminished glucose tolerance, and since then many cases have been reported in which a small amount of creatine is present in the urine. Following the discovery of the importance of phosphocreatine in the physiology of muscular contraction, it was thought that myasthenia gravis might be due to a disturbance in muscular metabolism with a deficient ability to store or to synthesize phosphocreatine. Since glycine (glycocol) and other aminoacids were found to increase the phosphocreatine in the muscles, treatment with glycine was investigated. Nevin¹³ has recently shown that the intrinsic chemical mechanism of muscular contraction is normal, and that the metabolic changes are secondary, and not of etiologic importance. Adams, Power and Boothby¹⁴ found that there was no particular chemical abnormality in this disease, and no striking abnormalities in the excretion of creatine or creatinine. The use of glycine produced no definite change in creatine metabolism. The blood constituents including calcium, magnesium, sodium, potassium, phosphorus, sugar, urea, creatinine, aminoacids and uric acid were also found to

be normal. It may be concluded that the disease is not due to faulty metabolism.

It is significant that the muscles most severely affected by fatigue need not be those most active at the time. Thus disturbance of ocular movements or speech may be aggravated or precipitated by fatigue as a result of a long walk, or even by mental strain. This suggests that some circulating toxin is present. Keschner and Strauss concluded that the disease is due to some endogenous poison with selective affinity for the muscles and their motor nerve endings, the lymphatic component of the hemopoietic system and the endocrine system, especially the thymus. Recently Butt¹⁵ has reported the finding of gram-positive cocci (streptococci) in the muscles in seven cases of myasthenia gravis, and postulates that they are the source of a toxin, which produces the abnormal fatigability of this disease. The organisms were scattered and present only in small numbers, at the periphery of lymphocytic foci. This finding needs further confirmation, before an infectious basis can be accepted.

Site of the Disorder

Studies of electromyograms by Cobb and others¹⁶ have localized the disturbance to the neuromuscular junction, where the nerve impulses are blocked, so that only a few of the muscle fibers supplied by a particular neurone are stimulated, resulting in a weak contraction. The exhaustion in myasthenia gravis is thus different from that of normal fatigue. It has recently been shown by Walker¹⁷ that physostigmine relieves this block, and this has been confirmed in the electromyographic studies of Lindsley¹⁸. He has studied the electrical potentials of single motor units during voluntary activity and found that in myasthenia gravis these potentials have a normal rhythm, but show wide variations in amplitude. With fatigue, these variations increase up to a total lack of response. The normal rhythm of response shows that the motor impulses are normally transmitted along the nerve and must be blocked at the neuromuscular junction. Following the injection of prostigmin the action potentials are greatly increased and of uniform amplitude.

Since physostigmine counteracts the effect of chlorine-esters in the blood, this seems to indicate that the stimulation of muscles is ac-

complished through acetylcholine produced at the myoneural junction, and that the fundamental disorder in myasthenia gravis may be a defect in production or a rapid destruction of acetylcholine at the nerve endings. Since there is no direct evidence of this, Briscoe¹⁹ suggests that the myasthenia may be due to an increased threshold for stimulation by acetylcholine, and that the effect of physostigmine might be to protect the acetylcholine so as to meet the threshold requirement of the muscle.

Prognosis

The prognosis has always been serious. In a few cases the disease is rapidly progressive and fatal in a few weeks. In many others more or less complete remissions occur which may last for many years. Relapses may follow trauma, exertion, infection, menstruation or pregnancy. Sudden death from respiratory or cardiac (?) failure may occur. In some cases, the disease remains limited to the ocular muscles for many years. The prognosis has been improved since the value of ephedrine and prostigmin were discovered. Boothly²⁰ stated that improvement might not set in for several months, but that most patients could be restored to a useful life. Of his 65 cases, 15 were at work full time, 25 part time, 12 were able to do light chores and only 5 confined to bed.

Treatment

Because of the occurrence of remissions it is often difficult to evaluate the benefit of specific measures in this disease. Undoubtedly the primary requirement is mental and physical rest. All exercises, electrical stimulation and other fatiguing measures are contraindicated. Treatment has varied with the conception of the nature of the disease. Many endocrine preparations have been used, but none has proved to be of value. Roentgen-ray treatment over the thymus region, which has seemed of benefit in a few cases, may be recommended as a therapeutic test. In 1922, Dana²¹ reported good results in 16 cases with the use of large doses of strychnine given subcutaneously.

A definite advance occurred in 1930, when Edgeworth¹⁰ discovered the value of ephedrine in this disease. This has been confirmed by many others. It is given preferably in small doses, as 1/8 grain, three to six times daily.

The ephedrine has not only a rapid temporary benefit, but also seems to result in a steady and continuous improvement. The dosage may be increased at times of special strain. The use of glycine (5-10 Gm. three times daily) was highly recommended on the theory of a metabolic disorder. Remen²² reported marked improvement in one case after taking glycine for three months, and Boothby²⁰ seems convinced that it is beneficial. However, some of my patients and others in the literature have not seemed to receive added benefit from glycine over ephedrine alone.

In 1934, Walker¹⁹ made an important discovery of the striking effect of physostigmine in this disease. She found that 1/60 grain given subcutaneously produced a remarkable relief of symptoms for two to four hours and that 1/45 grain gave relief of symptoms for six to seven hours, but produced weakness and tremor. With the use of 1/30 grain orally, she obtained slight benefit. The effect of prostigmin, a synthetic drug analogous to physostigmine was then studied and Pritchard²⁴ among others reported its use in seven cases. He noted that beginning within five minutes after injection, and reaching a maximum effect within thirty minutes, symptoms were markedly relieved for as long as eight hours. The addition of atropine 1/100 grain counteracted the effect of the drug on the heart and gastro-intestinal tract. The only untoward symptoms were a sensation of tightness around the eyes and fibrillary twitchings of the eyelids, lips, neck and extremities with large doses. As much as 5 c.c. has been injected.

This is one of the most valuable therapeutic measures yet discovered, and has the most specific effect. The use of this drug enables one to avoid the necessity of tube feeding in cases with difficulty in swallowing, and may be life-saving in emergencies. It is of value at times of added strain, such as an infectious disease or a surgical operation, and may assist a patient through an important business or social engagement.

Prostigmin or a related drug has also been found of value when taken orally. Denny Brown²⁵ has reported benefit obtained with physostigmine salicylate, giving 1/8 grain preceded by 20 minims of tincture of belladonna, the effect lasting about five hours.

Cooke and Passmore²⁶ have reported benefit from the oral use of eserine sulphate. Recently Everts²⁷ has treated two cases with prostigmin in 30 mg. doses orally with good results. Laurent and Walther²⁸ have found large doses of potassium chloride (4-5 Gm. six times daily) to have a similar though slight effect.

Case Reports

The following cases illustrate common features of this disease:

Case 1. A woman of 38 years was first seen on Aug. 28, 1926, complaining of drooping of the right eyelid and double vision. Two years previously she had noticed similar symptoms for a short period. In June 1926 she noticed a drooping of the right eyelid which would appear in the midday and by evening the eye would be closed. Each morning the drooping would be absent. This ceased after four days, but recurred a month later for two days. Symptoms again recurred on August 25th. With the drooping there was often double vision on looking to the right. She was able to overcome the ptosis at first but would soon tire and then be unable to do so. She stated that she had never been strong, but had no other complaints. The neurologic examination showed a ptosis of the right lid, and weakness of the right superior rectus muscle. All other findings were normal. She was placed on small doses of strychnine. When last heard from in July 1927, she was having no symptoms.

Case 2. A man of 44 years was first seen on Sept. 11, 1933, complaining of drooping of the right eyelid and double vision. A year previously there had been a drooping of the right eyelid for a period of two weeks, with complete closure for periods of an hour. At the same time there had been double vision. Two weeks before examination he developed double vision, and three days later a drooping of the right lid. Each morning, the eyes seemed normal until about 11 a.m. when the symptoms would begin to develop. There were no other complaints. Examination showed no abnormal findings except drooping of the right lid, varying in degree from time to time, with double vision on looking to the left. The blood Wassermann and other examinations gave normal findings. He was given ephedrine and the symptoms disappeared in about two weeks. When last heard from in February, 1936 he stated that he had had no recurrence of symptoms.

Case 3. A young woman, age 20 years, was first seen on Aug. 15, 1934, complaining of double vision. Five years previously, there had been double vision for one month. One year ago double vision recurred, and had been present ever since. It always seemed better each morning. She had consulted an ophthalmologist who found that the muscles involved in the production of double vision changed overnight. With the double vision, there had been drooping of the right eyelid, being closed completely for periods as long as two weeks. At other times the lid would be retracted and "pop open." There were no other complaints except headache on use of the eyes. She was anxious to attend college, but unable to study because of her ocular

symptoms.

Examination showed retraction of the right eyelid with widening of the palpebral fissure, inability to converge the right eyeball and double vision on looking to the right. There were no other significant findings. The basal metabolism, Wassermann reaction and other examinations gave normal findings. She was given ephedrine in small doses and glycine, and steadily improved, so that she was able to attend college. Double vision soon disappeared and she felt stronger generally. There was slight recurrence of symptoms with menstruation for a time. On March 19, 1936 she reported that she had been so well that she had stopped the medication a year ago, and had had no symptoms.

Comment: These cases are examples of mild recurring types of the disease, with symptoms limited to the ocular muscles. In case 2, the patient has been free of symptoms for two and one-half years, in spite of discontinuing treatment.

Case 4. A woman of 35 years was first seen on Nov. 27, 1934. She had recently recovered from typhoid fever, the temperature having been normal since November 4. On the 22nd she had noticed double vision. The following day there was difficulty in swallowing and on the 24th this had grown worse, so that she regurgitated fluids through the nose. Later she developed marked weakness in the upper extremities. Examination showed a marked disturbance in speech, drooping of both upper eyelids, weakness in turning either eye outward and marked difficulty in swallowing, although the palate moved upward slightly and without deviation. There was marked weakness of the upper extremities. There was no muscular atrophy. All reflexes, sensory and other neurologic findings were normal. The spinal fluid contained seven cells, no increased protein, and showed a negative mastic curve and Wassermann reaction. She was given ephedrine, $\frac{1}{4}$ grain three times daily, with considerable benefit. Withdrawal of ephedrine was followed by aggravation of the symptoms. After ten days she was able to swallow in small amounts and on December 17 she was able to eat satisfactorily, the ptosis had practically disappeared, and she was able to be out of bed.

Comment: This is an example of acute onset of symptoms following an infectious disease, typhoid fever.

Case 5. A young woman of 21 years was first seen on Dec. 3, 1933, complaining of difficulty in speech and swallowing. This had been first noticed in January, 1933. She stated that after talking about five minutes she would use up her strength and her speech would become indistinct. There would be periods of improvement for several weeks, then a recurrence of symptoms. Associated with the speech disorder, there had also been difficulty in swallowing with regurgitation of fluids through the nose. She was unable to drink through a straw. She stated that she was unable to talk while eating, because of weakness in the jaws. On smiling, the upper lip tended to be drawn upward in a snarling fashion. At times, she would be unable to

protrude the tongue past the lips. There were no other complaints. Examination showed no abnormal neurologic findings, except the dysarthria and difficulty in swallowing on fatigue. The basal metabolism and other examinations gave normal results. She was placed on small doses of ephedrine and improved until December 4 when for the first time she developed ptosis of the left eyelid and double vision. This soon disappeared on increased doses of ephedrine. When last heard from in January, 1936 she stated that she had reduced the ephedrine to one dose daily, had married, and had noticed no symptoms for almost a year.

Comment: This is an example of onset with weakness of the bulbar muscles, instead of the ocular muscles. The results of treatment with ephedrine in the above cases have been most gratifying.

Case 6. A woman of 24 years was first seen on June 15, 1932, complaining of double vision. The first symptom developed in May, 1931 following some "eye exercises," and it was found that there was a paralysis of the right internal rectus muscle. This double vision varied from time to time, being absent for periods as long as three weeks. In December, 1930 and again in March, 1931 there had been ptosis of the right eyelid, lasting about a week. The ocular disturbance was always worse at night and when tired. In February, 1932 she developed a weakness in her voice, with indistinct speech, especially when tired. There had also been difficulty in swallowing, with regurgitation of fluids through the nose at times. The jaws would tire quickly on eating. There were no other complaints. Examination showed a slight divergent strabismus; on looking to the right, the left eye failed to move inward; the right eye did not rotate upward and she was unable to converge the right eyeball. The speech was indistinct, of bulbar type. There were no other abnormal neurologic findings. The basal metabolism and electrocardiogram were normal. A roentgen-ray examination of the chest showed no thymus shadow. A glucose tolerance test following 100 grams of glucose showed a delayed and excessive rise in the blood sugar. There was a slight and variable creatinuria, which was not increased by taking glycine. She was placed on small doses of ephedrine with much improvement, although the weakness involved different ocular muscles at different times. The use of glycine for several weeks did not seem to be of greater benefit. There have been recurrences of ptosis and double vision for short periods, but the patient has improved steadily. The difficulty in speech has been the most troublesome symptom. A therapeutic roentgen-ray treatment over the thymus was thought to be of some benefit. When last seen on March 17, 1936, she had been feeling so well that she had stopped all medication a month previously. The only abnormality was some thickness of speech. There had been a marked improvement in facial expression. Following the injection of prostigmin (2 c.c.) the speech became clear for over 4 hours.

Comment: This is an example of more severe type, but there has been steady improvement under treatment with ephedrine

over a period of four years. The only prominent symptom at this time is disturbance in speech, which can be temporarily relieved by prostigmin, when desired.

Case 7. A man 54 years of age was first seen on Jan. 16, 1936, complaining of drooping of the left eyelid and double vision. There was a history of marked general fatigability for the previous three years. This was noticed during work, so that he would have to lie down and rest frequently in his office and take frequent vacations. He had to stop playing golf in June, 1934 because of the exhaustion it produced. He had also noticed a periodic hoarseness of the voice for several years. In December, 1935, he developed a blurring of vision and following the extraction of a tooth on the 21st, a drooping of the left eyelid appeared. Following an attack of influenza in January double vision developed.

Examination showed a drooping of both eyelids with limitation and dissociation in movement of the eyeballs to either side and upward. The ptosis varied from time to time. Following the exertion of a gastrointestinal roentgen-ray examination on February 18, the patient developed a marked difficulty in speech and swallowing. After talking a few minutes, the speech would become too thick to be understood and the voice weak. After a few minutes rest, the speech would become distinct. Difficulty in swallowing became marked, with regurgitation of fluids through the nose. After being out of bed a short time, he would notice marked weakness in the muscles of the back and neck, so that the head would tend to fall backward. The patient was placed on small doses of ephedrine and glycine and there was rapid improvement for the first week. The difficulty in swallowing, however, became worse so that eating was almost impossible. The injection of 2 c.c. of prostigmin gave marked relief from all symptoms for 4-5 hours; the ptosis was relieved, ocular movements became practically normal and the speech strong and distinct. Injection of 1 c.c. of prostigmin was sufficient to enable the patient to eat his meals without difficulty, and this has been used before each meal. Larger doses seemed to be followed later by increased weakness. Therapeutic roentgen-ray treatments over the thymus were also given. On February 14, ptosis of the right eye developed, lasting several days. Prostigmin has recently been used orally with even greater benefit than by injection. The patient at present is steadily improving especially as regards the ocular weakness.

Comment: This case is an example of more severe involvement, with a history of marked fatigability for three or four years, before the disease was recognized. Severe symptoms developed following the teeth extraction, influenza and a gastro-intestinal fluoroscopy. The effect of prostigmin has been most gratifying in enabling the patient to eat normally.

Conclusions

Seven cases of myasthenia gravis are reported, illustrating various types of the dis-

ease. In three cases, the disease was limited to the ocular muscles. In one case, onset was with bulbar involvement, and in another there was marked general fatigability for four years before the disease was recognized. One case developed acutely following typhoid fever. All have improved under treatment with ephedrine, some having stopped medication from one month to over two years without recurrence of symptoms. Glycine in four cases did not seem to give greater benefit than ephedrine alone. Prostigmin has been of remarkable benefit in one case in enabling the patient to eat without difficulty, and in avoiding tube feeding. The specific effect of this drug is one of the most important discoveries concerning this disease.

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THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

JANUARY, 1937

OBSERVATIONS ON INDUSTRIAL MEDICINE

The work of the industrial medical and surgical practitioner is rarely spectacular; it is not discussed over the afternoon tea or bridge luncheon in plush-furnished drawing rooms; yet it deals with the fundamentals of American progress and prosperity—the efficiency, and the conservation of the working time of the American laborer and mechanic.

In a Southland that is rapidly becoming industrialized the work means much to physicians of Georgia. To successfully meet these demands those of us who engage in the work must seek to become combinations of chemists, lawyers, psychologists and insurance adjusters, as well as outstanding humanitarians. To our general surgical and medical knowledge must be added an understanding of occupational diseases, mechanical and allergic industrial hazards.

We must be safety engineers in industry, as is the health officer in our communities, studying the plants we serve with a view to suggesting a few simple safety devices to eliminate recurring accidents of the same class; and personally becoming acquainted with various hazards to members, body and life, with a view of making industry safer for the workers.

The principal characteristic of the industrial physician should be an intelligent conservatism. With this should be coupled an infinite patience and attention to detail—which, by the way, is incompatible with the present unjust treatment time limit of the Georgia Compensation laws. There is hardly a day that passes but that some workman suffers irreparable loss of his earning power in the sacrifice of valuable members that intelligent conservatism, patience and detailed observation might have saved him.

In private practice the physician is responsible only to his patient and family; while the industrial physician's responsibility is

three-fold—to his patient; the employer; and the insurance carrier. To the patient, to see to it that at the earliest possible moment he can safely be returned to full-time, and to the extent of earning power compatible with the gravity of the injury; to the employer in the prevention of increased insurance carriage charges or premiums by controlling as far as possible compensation payments for loss of time and for permanent disabilities; to the insurance carrier, in judiciously shortening temporary disabilities, avoiding unnecessary attention within the bounds of conscientious service, and limiting permanent disabilities to the best of his knowledge and skill.

To these responsibilities must be added a tactful management of the patient so as to hold his confidence, discourage malingering, and thus avoid often unpleasant "hearings," that prove costly to insurance carriers, inconvenient to employers and their office forces, sometimes embarrassing to doctors; and from which injured employees often obtain much less than they would have gotten.

The conscientious industrial surgeon, after all, is the one upon whom both the injured worker and the Industrial Commission depend for correct and just evaluation of both temporary and permanent disabilities. Therefore, a careful, scientific and conscientious estimation that arrives at a just and true conclusion does much to serve the interests of all concerned.

Cosmetic results, symptomatic cure, restoration to reasonably limited service are often the goals of the internist and surgeon in private practice. In addition to these goals the industrial surgeon endeavors to meet the demand for fully restored functions which mean earning power under the strenuous conditions.

J. W. SIMMONS, M.D.

DUES

With the beginning of the New Year, membership dues must be paid. The per capita assessment of dues for members of the MEDICAL ASSOCIATION OF GEORGIA is fixed by the House of Delegates of the Association and is payable through the secretary of each component county society. Members whose dues are in arrears are not entitled to receive important benefits of the Association, which include medical defense and THE JOURNAL.

OVERSTANDARDIZATION AND OVERCENTRALIZATION

All are aware of the epoch-making work of our various standardizing boards and committees but some are beginning to consider the possibility that the movement is being carried too far.

At the beginning of the present century the great majority of our medical schools were operated by faculties composed largely of clinical practitioners engaged in private practice, so that the preclinical branches were sadly neglected, and many of the schools were making little or no contributions to research. When this was brought to the attention of the various boards of control there was a commendable effort on the part of these boards to correct this defect. As a result of these efforts the preclinical and other laboratory branches were rapidly manned by full-time professors and assistants of ability and earnestness of purpose though, in some instances, somewhat lacking in their sympathies along clinical lines. However, for some time the clinical aspects of the curriculum continued to predominate.

Since the full-time men were more closely associated with the boards of control, these boards tend more and more to look to them in shaping their policies and selecting the personnel for carrying on the work of the schools; and, as opportunities presented, carried out the policy of placing them in executive positions instead of as formerly drawing from the personnel of the clinical faculty.

The next step naturally followed. These executives being more especially interested in the problems of investigation, rapidly established the standard of research attainment as the major and, in some instances, the sole criterion for determining the fitness for positions on the faculty, classing as nonproductive those who were not publishing results of investigations regardless of their teaching and clinical activities.

Up to a certain point this made for increased efficiency, but it seems that there is a real peril in the overdevelopment of this tendency. Professional life with its problems should be approached in the spirit of research and the mind kept alert by the search for additional truth but at the same time we

should realize that the primary function of the medical school, especially when supported by public funds, is to prepare practitioners to serve the public in caring for the sick and injured.

The second peril in these developments is the tendency toward an unwarranted centralization. It is almost inevitable that those placed in charge of the movement are recruited largely from the large centers of population and all too frequently have very inadequate appreciation of the needs of the more sparsely settled sections of the country. It is very difficult for the teacher in New York or Chicago to fully appreciate the training best suited to prepare one to meet the requirements of rural practice.

Were it practicable, it would be of great value to ascertain the opinions of the alumni of our schools as to the merits of the various branches in preparing them for their life work as practitioners of the healing art.

The founders of the University of Georgia were wiser than they realized in adopting the motto on the great seal:

"Et-Docere-et-Rerum-Exquirere-Causas"

The foregoing is not written for the purpose of minimizing the value of the adequate training along other lines, but to enter an earnest plea for according clinical teaching by clinical personnel its proper place in the medical curriculum.

JOSEPH AKERMAN, M.D.

MACON MEETING

The Eighty-Eighth Annual Session of the MEDICAL ASSOCIATION OF GEORGIA will be held in Macon May 11-14. Indications point to one of the best meetings in the history of the Association. The House of Delegates will have more than the usual amount of business to attend to, due to new problems which involve both State and Medicine. A diversified scientific program will be offered and will include several distinguished guest speakers, two of whom are officers of the *American Medical Association*.

Titles for papers should be submitted to the Committee on Scientific Work and should be directed to the office of the Secretary-Treasurer.

A QUART A DAY

Most distributors of milk, many mothers and a number of physicians hold the opinion that every child should consume one quart of milk daily. They ignore the possibilities that a child may either dislike milk, or consume milk to the exclusion of other foods.

Much use has been made and is being made of such slogans as "*Have You Had Your Quart of Milk Today*" and "*Milk . . . The Perfect Food.*" Schools and clinics are placarded with posters eulogizing the benefits to be derived from the daily quart. It is not difficult to understand how the idea has become so fixed in the minds of a majority of mothers.

Of late, there has been an even more questionable trend in publicity methods. There appeared in New York newspapers, under the auspices of the Bureau of Milk Publicity of New York, an advertisement carrying the caption, "*Alkalize with Milk.*" Since, expressed in terms of cubic centimeters of normal reagent per 100 grams of food, a certain humble vegetable has an alkaline value of 8 as compared to 2.3 for milk, a valuable lead is furnished to growers of this particular tuber, who might, with three times as much logic, admonish those who have overindulged to "*Keep Basic with Rutabagas.*"

Not so long ago a medical publication carried, in the form of an advertisement, an analysis of the mortality among children in a large hospital. The modest conclusion was drawn that a change from one type of milk to another caused a lowering of the mortality from 18 to 3 per cent and that, therefore, "In the future . . . milk must be considered both a medicine and a food."

It seems about time to inquire whether medicine is to be considered as a medicine or food, or both, and if it is one or the other, or both, how does it size up? It would be somewhat absurd to analyze the idea of milk as a medicine. There are many foods which, in more concentrated form, would replace milk as a source of iron, calcium, or vitamins, where some specific dietary constituent is desired. The virtue of milk is that, to some extent, it contains them all.

Now, consider milk as a food. *Milk is the most nearly perfect food, not a perfect food.* Even so, there is no justification for the as-

sumption that every child should drink his quart daily. This amount of milk is often not compatible with a rounded dietary in children with small stomachs or capricious appetites. It would not be possible to accomplish a balanced ration if such a child were compelled to drink this much milk.

Briefly, some of the manifestations of milk intolerance or overconsumption are: anemia, constipation, abdominal pain, poor appetite and certain allergic phenomena. Milk is not a bountiful source of iron. It is frequently constipating. Many cases of vague abdominal pain, the so-called "umbilical colic," respond quickly to a reduced milk intake. One of the first steps in the correction of anorexia in children is a sharp decrease in the quantity of milk, or even its entire elimination from the dietary. The relation of milk to allergic conditions is well known. The vitamin content of milk, except for vitamin A, is negligible.

Physicians who see a good number of children are able to recognize, by the set of their jaw, those well-intentioned mothers who "see to it myself that Rudolph gets his quart of milk daily" and are puzzled by the circumstance that Rudolph does not gain by healthy leaps.

A fear of being misunderstood prompts the remark that this is not an attempt to make a case against milk. If a child is able to drink and comfortably digest a quart of milk together with other proper foods, he is entitled to it. It is beyond question the most valuable single food in the child's dietary. The writer wishes only to call attention to some of the fallacious ideas that are abroad with respect to milk being the perfect food, without due regard to a child's individual constitution. In view of its recognized virtues, it is difficult to understand how dispensers of milk are willing to render themselves vulnerable to justifiable criticism by attributing to milk qualities which neither it nor any other single food possess.

RUSKIN KING, M.D.

The JOURNAL would like to record the scientific work of Georgia doctors. It earnestly requests, therefore, that each physician in the State who publishes a contribution in some other medical periodical submit an abstract of the article for these columns.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

EVALUATION OF THE WEIL-FELIX TEST FOR TYPHUS

In 1916 Weil and Felix isolated from the urine of a typhus patient a strain of *Bacillus proteus* which was agglutinated by the patient's serum at dilution 1:200. They called this strain X_2 and found that it was agglutinated by the sera of 33 additional cases of clinical typhus. Later other strains of *B. proteus* were studied and one was found which agglutinated at much higher serum dilutions than X_2 . This strain was X_{19} . Later investigation by a number of workers showed that *Proteus* X_2 or X_{19} has no etiological relationship to typhus fever or its causative organism, *Rickettsia provazeki*. Nevertheless suspensions of living *Proteus* X_{19} are so consistently agglutinated by typhus sera that this reaction is very valuable as a diagnostic aid; in fact, it is the only diagnostic recourse other than clinical findings. The Weil-Felix test performs equally well for both old world epidemic and Brill's endemic typhus. It is also usually positive for Rocky Mountain Spotted Fever.

The State Department of Health Laboratory reports the Weil-Felix reaction in the following terms:

Complete absence of reaction—Negative.

Complete reaction not above dilution 1:80—Doubtful.

Complete reaction not above dilution 1:160—Weakly Positive.

Complete reaction not above dilution 1:320—Positive.

Complete reaction above dilution 1:320—Strongly Positive.

With rare exceptions a "strongly positive" test will be obtainable at some time after the first week in every case of typhus fever.

The Limitations of the Weil-Felix Reaction

1. It does not appear until after the first week of fever; hence is of little value in early diagnosis. Frequently it is delayed until the ninth or tenth day of fever and at times does not appear until after convalescence sets in.

2. It is not specific, in that body disturbances other than typhus may produce low grade reactions. For example—Malaria, typhoid and undulant fevers. However, such false reactions rarely show titers higher than 1:320 dilution of patient's serum.

3. When low grade reactions appear, these may be entirely false reactions, or they may mean that the patient has not had typhus long enough to produce a strong reaction. Only a second specimen can solve this uncertainty. If the first weak reaction is due to typhus, the second test will be much stronger;

if not typhus, the second test will show very little increase.

It is very important that the physician keep in mind these limitations, in order to avoid confusion. One should question any Weil-Felix test of a titer less than 1:320, or better still 1:640, if the clinical picture does not coincide.

In other words, the Weil-Felix reaction is not a diagnostic test, but as is true with most laboratory procedures, it is a diagnostic aid, the value of which must depend on an application of its limitations.

T. F. SELLERS, M.D.

Chief of Laboratories.

EARLY HISTORY OF MALARIA AND YELLOW FEVER IN GEORGIA

The first historical data indicating the probability of malaria or yellow fever in Georgia antedates to 1539 when Hernando DeSoto crossed the present Altamaha River on an expedition with hopes of finding gold. Historical maps show that after passing north through the present State of Georgia he turned west and shortly after discovered the Mississippi River. He died of a fever which he had previously contracted on his expedition.

In the narrative of this expedition across the area now occupied by Georgia we read the history of an Indian town called Cutifachiqui. DeSoto left the present site of Tallahassee, Fla., and moved northeastward and on April 28, 1540, he entered Cutifachiqui, an Indian town. Opinions of the location of this town vary. From description it may have been at the confluence of the Ocmulgee and Oconee rivers. Jones' History of Georgia quotes an extract from DeSoto's account of this place as follows: "In the vicinity of this settlement were large vacant towns overgrown with grass. It was ascertained that two years before there had been a pest in the land and in order to escape its ravages multitudes had moved away. Many sepulchres were searched and pearls and various figures carved from shells were found." Another reference which may indicate that this so-called pest was malaria or yellow fever.

In 1564 French Huguenots were sent to Florida by King Charles IX of France. They built a fort near the present city of Jacksonville and named it Caroline. This French aggression caused envy and called for action by King Philip of Spain. In April 1565 he sent Menendez de Aviles to Florida with a

Spanish colony and founded St. Augustine.

In April, 1566, with fifty men Menendez de Aviles made a visit to the northern Georgia coast. He landed on St. Catherine Island and here he found an Indian chief named Guale. He then named the island Guale, and later the territory south to the St. Johns River had this name. The post on St. Catherine's Island, established in 1566, was the first of Spanish settlements on the Georgia coast. Immediately Jesuit missionaries were brought to the Georgia coast to teach the native Indians Christianity. One of these Jesuit missionaries was Brother Domingo who immediately translated the catechism and prepared a grammar in the Yamassee Indian tongue. But before the end of 1568 Brother Domingo died during a fever epidemic (evidently yellow fever or malaria). History records that the Jesuit missionaries survived only a short period. The Indians had their own views and during an uprising in 1570 the Missions of Guale were destroyed.

In 1573, a band of Franciscan missionaries came to the present Georgia coast. Cumberland Island, Sapelo Island, St. Simons Island and Jekyll Island were places of missionary activities. Wars, raids and massacres followed after establishment of the Franciscan Missions. In 1597, a young Indian chief named Juan led a massacre in which several of the Franciscan missionaries were slain and beheaded. An urgent call was sent to St. Augustine and Governor Canzo arose from a sick bed and with 150 soldiers sailed north through the inland passage and dispersed the Indians. These missions again flourished but evidently mosquito-borne diseases were prevalent. It is stated that about the year 1612 disease epidemics were so great that baptisms at the missions were greatly stimulated. References are made to wholesale baptisms, medical aid to the sick and last rites performed for the dead and dying. All indications point to probabilities of malaria and yellow fevers. Of the missions on the South Atlantic coast in 1655 five of them were in Georgia. These were on Cumberland Island, St. Simons Island, one on the mainland near St. Simons, Sapelo Island and St. Catherine's Island.

About this time the English began to come to the South Atlantic coast from the Antilles. Various sites were selected on debatable ground and it was not until 1670 that Charlestown (now Charleston), S. C., was founded and Spain recognized this as an English settlement.

From this time the Indian tribes living west encouraged the English to cross the Savannah River to engage in trade. The Spaniards attempted to prevent this. As early as 1685, the English explored as far west as the

Chattahoochee River. This brought a clash with the Spaniards. For years Spanish and English waged intermittent battles for supremacy among the Creek Indians. This also led to war between the Creek and Yamassee tribes, causing a feeling of insecurity for the Carolina English colony. Debates ensued between the English and Spanish relative to boundaries and possessions. In order to settle these questions the need for a buffer colony was recognized. Finally the colony of Georgia was founded. The charter designated Georgia as that territory between the Altamaha and Savannah rivers.

From such history we are led to believe that Hernando DeSoto may have previously had malaria or may have contracted malaria in this region in 1539, also that in the locality of the Indian town Cutifachiqui in 1538 mosquito-borne epidemics must have been prevalent. Certainly history of this region, beginning 1564, might indicate that the Spanish suffered epidemics from mosquito-borne diseases in localities of the old Spanish Mission ruins found at the present period along our Georgia coast.

L. M. CLARKSON, *Chief,*
Division of Sanitary Engineering.

ADEQUATE NURSING CARE OF THE PATIENT

Hospital associations as well as national and state nursing organizations are doing more to insure adequacy of patient care in hospitals than ever before. Among the groups making major contributions over a period of years have been the American Hospital Association and the National League of Nursing Education. The American College of Surgeons has set up safeguards for the patients in practically all major departments of the hospital. Because opinions as to what constitutes an adequate nursing service are so divergent, and to fall in line with the standard setting by the College, the American Hospital Association and the National League of Nursing Education have jointly sponsored the preparation of a "Manual of the Essentials of Good Hospital Nursing Service."¹ This Manual aims to act as a guide in suggesting reasonable standards for adequate nursing care, which it defines as "the amount of care essential to provide the proper professional treatment for the well-being and recovery of the patient, both mental and physical."²

Since a large number of the small inadequate schools of nursing in Georgia have closed, much of the bedside nursing in our hospitals is being given by the general staff nurse. The necessary adjustment to this type of nursing service has been difficult in many instances, both for hospitals and nurses.

¹The "Manual" may be procured from the National League of Nursing Education, 50 West 50th Street, New York, New York.

²Manual of Essentials of a Good Hospital Nursing Service, Page 10.

Therefore, the Georgia State Nurses' Association at their Thirtieth Annual Convention, November 2, 3 and 4, 1936, held at Columbus, voted to endorse and adopt the "Resolutions on the General Staff Nurse and Employment Conditions on Which Good Nursing Service Depends," which were adopted by the American Nurses' Association biennial meeting in Los Angeles, June, 1936, and are as follows:

"Because the American Nurses' Association and the Georgia State Nurses Association are directly concerned with all matters pertaining to nurses and nursing; it considers one of its primary objectives to be that of providing skilled nursing care to the sick, both in the hospital and in the home. The general duty of staff nurse has in the last few years developed into an essential part of hospital organization, providing in chief measure the bedside care for the seriously ill. The care of the sick in hospitals is being jeopardized by the living and working conditions imposed on graduate staff nurses in some places. Seriously ill patients, both in hospitals and in homes are further endangered because their care is being entrusted to subsidiary workers without adequate supervision and control; therefore be it

"RESOLVED, That hospitals be urged to adopt the essentials of a good hospital nursing service, as approved by the American Hospital Association and the American Nurses' Association and expressed in the 'Manual of the Essentials of a Good Hospital Nursing Service.' These essentials include the provision of working conditions which make it possible for the nurse to give good care to the patient; a salary schedule which gives consideration to the nurses' need for a reasonable degree of security; living conditions conducive to good health; and opportunities for development. Be it further

"RESOLVED, That we urge the cooperation of the medical profession and community organizations in placing the care of seriously ill patients in their homes, in the hands of professionally trained nurses to the end that the care of the sick in homes may be properly safeguarded. And be it further

"RESOLVED, That subsidiary workers be used only for such duties, in the care of the sick, as are outlined for these workers in the 'Manual of the Essentials of a Good Hospital Nursing Service,' and for similar duties in the home. Finally be it

"RESOLVED, That we inform our colleagues in the medical profession, in hospitals, and other organizations interested in community welfare, as well as the public, of the position of the American Nurses' Association in these matters."

The need and desire for guidance in the matter of staffing hospital nursing services has been abundantly shown by the demand for the Manual. "The American Hospital Association has distributed 2,500 copies and the National League of Nursing Education over 1,000, sending copies to all States,"

stated the Editor of the American Journal of Nursing.

We are assured by the American College of Surgeons that use will be made of the Manual during the coming year in formulating plans for their surveys of nursing service.

The American College of Surgeons in the Annual Report of Hospital Standardization, published in the College's bulletin for October, includes a suggestive section on nursing service. It is in substantial agreement with the "Manual of the Essentials of Good Hospital Nursing Service," and with the principles laid down in the National League of Nursing Education's "Essentials of a Good School of Nursing."

At the present time the standardization program of the American College of Surgeons is based on five criteria, which are as follows:

- Staff Organization
- Competence of Medical Staff
- Staff Responsibility
- Accurate and Complete Records
- Diagnostic and Therapeutic Facilities.

It will be a fortunate day for patients in many hospitals when a sixth and equally specific criterion on nursing service shall have been added. Nurses know of extremely unsatisfactory types of nursing services administered in hospitals, which proudly display the insignia of the American College of Surgeons. The College is undoubtedly aware of this situation. In their October bulletin may be found this statement: "With the advent of an oversupply of nurses, many schools, particularly in the smaller hospitals, were closed and graduate nurses engaged. Such a service, if well organized, and supervised, is highly satisfactory. As a safeguard and to insure good quality, only registered nurses should be employed."

NOTE: References and quotations from: "The American Journal of Nursing," Page 1231, December, 1936; and from, "Hospitals" (The Journal of the American Hospital Association), Page 83, December, 1936.

DURICE DICKERSON, R.N.,
Executive Secretary,
Georgia State Nurses' Association.

ALLEN O. WHIPPLE, New York (*Journal A. M. A.*, Nov. 28, 1936), describes the function of the Combined Clinic in Splenopathy of the Vanderbilt Clinic and the Presbyterian Hospital since its inception six years ago. They now have studied and are seeing in their follow-up some 200 patients with lesions of the spleen. From the standpoint of the care of the patient, teaching and research—the three cardinal criteria of any clinic worthy of the name—the Combined Clinic has everything to recommend it. The patients get more careful study and discriminating opinion as to therapy, because it is the result of agreement among medical and surgical workers, based on mutual follow-up studies. Overconservatism or radicalism in therapy cannot dominate such a clinic.

WOMAN'S AUXILIARY

OFFICERS, 1936-1937

President—Mrs. Wm. R. Dancy, Savannah.
 President-Elect—Mrs. Ralph H. Chaney, Augusta.
 First Vice-President—Mrs. B. H. Minchew,
 Waycross.
 Second Vice-President—Mrs. Clarence L. Ayers,
 Toccoa.
 Third Vice-President—Mrs. J. A. Redfearn,
 Albany.

Recording Secretary—Mrs. Warren A. Coleman,
 Eastman.
 Corresponding Secretary—Mrs. Lee Howard,
 Savannah.
 Treasurer—Mrs. W. A. Selman, Atlanta.
 Historian—Mrs. Grady N. Coker, Canton.
 Parliamentarian—Mrs. John E. Penland, Waycross.

COMMITTEE CHAIRMEN

Student Loan Fund
 Mrs. Robert C. Pendergrass, Americus.
Health Films
 Mrs. A. J. Mooney, Statesboro
Public Relations
 Mrs. Wallace Bazemore, Macon.
Doctors' Day
 Mrs. Ernest R. Harris, Winder.

Legislation
 Mrs. Dan Y. Sage, 47 Inman Circle, Atlanta.
Press and Publicity
 Mrs. J. Harry Rogers, 134 Huntington Rd., Atlanta.
Research in Romance of Medicine
 Mrs. D. N. Thompson, Elberton.
Jane Todd Crawford Memorial
 Mrs. Eustace A. Allen, 18 Collier Rd., Atlanta.

AUXILIARY ACTIVITIES

Tri-County Auxiliary

Mrs. Ralph Chaney, Augusta, President-Elect of the Auxiliary, spoke at the meeting of the Tri-County Auxiliary, composed of Burke-Screven-Jenkins Counties, held in Millen recently. She stressed the Social Security Act, Better Films, Health Education and urged that members be informed on pending legislation. Mrs. A. J. Mooney, Statesboro, Chairman of Health Films, was another State officer present.

The Auxiliary made contributions to the Student Loan Fund and the Health Film Library. Two recent brides, Mrs. Arnold Mulkey, Millen, and Mrs. Everett Barger, Waynesboro, were welcomed as new members. Others present were Mrs. Ross Brown, Atlanta; Mrs. Fielding Lanier, Sylvania; Mrs. W. R. Lowe, Midville; Mrs. J. R. Lewis, Waynesboro; Mrs. W. W. Hillis, Sardis, and Mrs. H. B. Senn, Mrs. H. G. Lee and Mrs. Cleveland Thompson, Millen, the latter of whom was hostess at a luncheon following the meeting.

Georgia Medical Society

Mrs. W. R. Dancy, State President, spoke on Auxiliary work at the November meeting of the Woman's Auxiliary to the Georgia Medical Society, which was held in Savannah recently at the home of Mrs. Julian K. Quattlebaum, with Mrs. S. P. Sanford and Mrs. Rufus Graham co-hostesses. Mrs. Lehman Williams, Vice-President, presided.

Mrs. S. Elliot Wilson was elected Second Vice-President to fill the vacancy caused by the resignation of Mrs. C. R. Riner, who has moved to South Carolina. Miss Frances Ennis, of the faculty of the Armstrong Junior College, told of conditions of health and sanitation as noted by a casual observer dur-

ing her recent European tour. Health education literature was distributed.

It was announced that Mrs. Hugo Johnson will attend the annual Sunshine Unit pantry shower and will make the contribution of the Auxiliary at that time. A committee was appointed to prepare a birthday celebration for the child occupying the Auxiliary's bed at the Unit and another was named to prepare a Christmas box for the boy at Berry School aided by the Auxiliary.

Mrs. T. H. D. Griffiths, whose husband is public health officer in charge of malaria control work in Savannah, and Mrs. J. P. Eberhart and Mrs. Harry Sand, wives of the Marine Hospital staff doctors, were visitors.

Fifth District

Mrs. W. R. Dancy, State President of the Auxiliary, was honor guest at the meeting of the Fifth District Auxiliary, which was held in Atlanta recently. Mrs. Dancy made an interesting talk, outlining her objectives for the year. She was introduced by Mrs. Joseph Yampolsky, who has served most efficiently as manager for the past two years.

New officers elected for the next two years are Mrs. Eustace A. Allen, Manager; Mrs. W. W. Anderson, Vice-Manager; Mrs. Henry Poer, Secretary; Mrs. Edward S. Wright, Chairman of Decoration Committee; Mrs. Harry Lange, Publicity Chairman, and Mrs. N. M. Owensby, Scrap-Book Chairman. The meeting followed a buffet supper at which Auxiliary members were guests of the doctors of the Fifth District.

Third District

Mrs. E. B. Davis, Byromville, was elected Manager of the Third District Auxiliary at the district meeting held recently in Fitzgerald. Other officers named were Mrs. Loren Gary, Shellman, Vice-Manager, and Mrs. W. G. Elliot, Cuthbert, Secretary-Treasurer.

Mrs. Davis presided over the meeting, which was featured by a talk by Mrs. Warren Coleman, Eastman, State Recording Secretary, on the importance of Hygeia, the Student Loan Fund and Red Cross activities. The Ben Hill Medical Society entertained the visitors at a banquet at the American Legion Hall.

Fulton County

Dr. Howard Hailey spoke on cosmetics at the October meeting of the Auxiliary to the Fulton County Medical Society, and Dr. C. C. Aven discussed legislation at the November meeting of this group, both of which were held at the Academy of Medicine in Atlanta. Plans were made at both meetings for a benefit bridge party and fashion show which the Auxiliary sponsored on November 3 at the Piedmont Driving Club.

Recently installed officers of the Auxiliary are Mrs. Charles Boynton, President; Mrs. Stephen Brown, President-Elect; Mrs. James L. Pittman, First Vice-President; Mrs. John Funke, Second Vice-President; Mrs. Jesse York, Recording Secretary; Mrs. James N. Brawner, Corresponding Secretary; Mrs. Richard E. Newberry, Treasurer; Mrs. Ed H. Greene, Parliamentarian; Mrs. Linton Smith, Historian, and Mrs. J. R. Childs, Auditor.

Harris County

Dr. B. N. Bussey read a most interesting article on the health program in Harris County at the meeting of the Harris County Auxiliary, which was held recently at the home of Mrs. J. P. Ellis in Chipley. Dr. Bussey stated that typhoid fever has been virtually stamped out in the county; that modern and sanitary structures, enhancing the health of the children of the community, have replaced former school buildings; that school children had been examined, causing their attendance to be among the best in the State; and that clinics were held throughout the county, the medical authorities being assisted in all these endeavors by county officials, Woman's Clubs and P.-T. A. groups.

Richmond County

The second autumn meeting of the Richmond County Auxiliary was held recently at the beautiful new home of Dr. and Mrs. Ralph Chaney in Forest Hills, Augusta. Important business matters were brought up and the Auxiliary looks forward to a year of renewed activity. Mrs. Robert Crichton is President of the Auxiliary and Mrs. G. L. Kelly is Publicity Chairman.

National News Letter

Mrs. J. P. Simonds, Chairman of Press and Publicity for the Woman's Auxiliary of the American Medical Association, has written the Georgia Press Chairman and requested

that she ask the county Auxiliaries of the State to subscribe to the National News Letter this year. The subscription is \$1 for the four issues and by subscribing, Auxiliaries will greatly help the National Publicity Committee to make the News Letter better and larger each time. Mrs. Simonds will receive subscriptions at 25 East Walton Place, Chicago, Illinois.

News Items

Mrs. Olin S. Cofer, Atlanta, member of the Fulton County Auxiliary, was elected Parliamentarian at the recent meeting of the Woman's Auxiliary to the Southern Medical Association, held in Baltimore. The election of a Georgia Auxiliary member to the Board of the Southern group is of keen interest and all those who know Mrs. Cofer are sure she will serve as efficiently in her new office as she has in the many offices which she has filled in her local group.

Mrs. William R. Dancy, Savannah, State President, also attended the convention in Baltimore. Among others from Georgia present were Mrs. L. W. Williams, Savannah, who has been Publicity Chairman during the past year, and Mrs. John Turner, Mrs. John Fitts and Mrs. Henry Poer, all of Atlanta.

THE TREATMENT OF MYASTHENIA GRAVIS

(Continued from Page 31)

- Oral Administration of Prostigmin. Bull. N. Y. Neurol. Inst. 4:523 (Dec.) 1935.
28. Laurent, L. P. E., and Walther, W. W.: The Influence of Large Doses of Potassium Chloride on Myasthenia Gravis, Lancet 1:1434 (June 22) 1935.

Discussion of Paper of Dr. William A. Smith

DR. R. B. WILSON (Atlanta): Dr. Smith could scarcely have selected a subject that is quite so interesting and that offers such possibilities. So many of these disorders of muscle strength and muscle tone are clearly related to disturbances of the autonomic nervous system. We are just beginning to realize that we can influence them with certain drugs that have specific effect on the parasympathetic or the sympathetic divisions, though, in most of these disorders, knowledge of the exact physiology is as yet incomplete. We see certain spastic conditions, for example, in which it has been suggested that a sympathetic disturbance or a sympathetic preponderance is responsible. Some have thought that they were able to overcome some of these spastic conditions or to decrease them by eliminating the sympathetic. On the other hand, some evidence suggests that the parasympathetic has a great deal to do with maintaining the muscle tone. So we are still not clear about some of these disorders. Certain muscular dystrophies are unquestionably related to the disturbance of the autonomic nervous system. And certain of these autonomic drugs have exerted a beneficial influence. Even in epilepsy, we occasionally run across types in which there is a so-called preponderance of the parasympathetic, so-called vagotonia, in which the parasympathetic depressing drugs are beneficial.

It is a field we are just beginning to explore. The

possibilities are almost unlimited.

DR. WILLIAM A. SMITH (Atlanta): I know of no disease more dramatic in its manifestations than myasthenia gravis. In the past two or three years the disorder has been localized to the nerve endings in the muscles, and within the past year a drug has been found which has a specific effect. This drug may be given by injection, or may be used by mouth also with good effect. Since so much progress has been made in our knowledge of this disease, it is hoped that the etiology will soon be discovered.

COUNTIES REPORTING FOR 1937

Dougherty County Medical Society

The Dougherty County Medical Society announces the following officers for 1937:

President—Frank Thomas, Albany.
Vice-President—N. R. Thomas, Albany.
Secretary-Treasurer—I. M. Lucas, Albany.
Delegate—H. M. McKemie, Albany.
Alternate Delegate—W. P. Ryan, Albany.
Censors—E. F. Sapp, A. S. Bacon, and J. P. Tye.

Carroll County Medical Society

The Carroll County Medical Society announces the following officers for 1937:

President—H. J. Goodwyn, Carrollton.
Vice-President—C. L. Baskin, Bremen.
Secretary-Treasurer—D. S. Reese, Carrollton.
Delegate—S. F. Scales, Carrollton.
Alternate Delegate—H. L. Barker, Carrollton.

Tift County Medical Society

The Tift County Medical Society announces the following officers for 1937:

President—W. T. Smith, Tifton.
Vice-President—D. B. Harrell, Tifton.
Secretary-Treasurer—C. S. Pittman, Tifton.
Delegate—C. A. Fleming, Tifton.
Alternate Delegate—C. S. Pittman, Tifton.
Censors—T. F. Little, W. T. Smith and W. F. Zimmerman.

Cherokee-Pickens Counties Medical Society

The Cherokee-Pickens Counties Medical Society announces the following officers for 1937:

President—J. T. Pettit, Canton.
Vice-President—C. J. Roper, Jasper.
Secretary-Treasurer—Chas. R. Andrews, Jr., Canton.
Delegate—C. J. Roper, Jasper.
Alternate Delegate—J. P. Turk, Nelson.

Georgia Medical Society (Chatham County)

The Georgia Medical Society announces the following officers for 1937:

President—G. H. Faggart, Savannah.
President-Elect—E. C. Demmond, Savannah.
Vice-President—Ruskin King, Savannah.
Secretary-Treasurer—O. W. Schwalb, Savannah.
Delegate—J. C. Metts, Savannah.
Delegate—A. A. Morrison, Savannah.
Alternate Delegate—H. J. Morrison, Savannah.
Alternate Delegate—J. K. Quattlebaum, Savannah.

Coffee County Medical Society

The Coffee County Medical Society announces the

following officers for 1937:

President—J. W. Wallace, Douglas.
Vice-President—B. O. Quillian, Douglas.
Secretary-Treasurer—T. H. Johnston, Douglas.
Delegate—H. Goodwin, Douglas.
Alternate Delegate—Sage Harper, Ambrose.

Emanuel County Medical Society

The Emanuel County Medical Society announces the following officers for 1937:

President—C. E. Powell, Swainsboro.
Vice-President—S. S. Youmans, Oak Park.
Secretary-Treasurer—R. C. Franklin, Swainsboro.
Delegate—J. H. Chandler, Swainsboro.
Alternate Delegate—R. C. Franklin, Swainsboro.

Randolph County Medical Society

The Randolph County Medical Society announces the following officers for 1937:

President—L. R. Massengale, Cuthbert.
Vice-President—J. C. Patterson, Cuthbert.
Secretary-Treasurer—W. G. Elliott, Cuthbert.
Delegate—T. F. Harper, Coleman.

Thomas County Medical Society

The Thomas County Medical Society announces the following officers for 1937:

President—J. W. Reid, Thomasville.
Vice-President—C. H. Ferguson, Thomasville.
Secretary-Treasurer—Rudolph Bell, Thomasville.
Delegate—Chas. H. Watt, Thomasville.
Alternate Delegate—A. D. Little, Thomasville.

Douglas County Medical Society

The Douglas County Medical Society announces the following officers for 1937:

President—R. E. Hamilton, Douglasville.
Secretary-Treasurer—C. V. Vansant, Douglasville.
Delegate—C. V. Vansant, Douglasville.

Floyd County Medical Society

The Floyd County Medical Society announces the following officers for 1937:

President—Robert M. Harbin, Jr., Rome.
Vice-President—T. H. Moss, Rome.
Secretary-Treasurer—Ralph N. Johnson, Rome.
Delegate—W. P. Harbin, Jr., Rome.

Henry County Medical Society

The Henry County Medical Society announces the following officers for 1937:

President—R. V. Brandon, McDonough.
Vice-President—R. L. Crawford, Locust Grove.
Secretary-Treasurer—E. G. Colvin, Locust Grove.
Delegate—R. L. Tye, McDonough.
Alternate Delegate—H. C. Ellis, McDonough.

Gwinnett County Medical Society

The Gwinnett County Medical Society announces the following officers for 1937:

President—W. W. Puett, Norcross.
Vice-President—J. C. Orr, Buford.
Secretary-Treasurer—H. D. Carey, Lawrenceville.

Tattnall County Medical Society

The Tattnall County Medical Society announces the following officers for 1937:

President—J. C. Collins, Collins.
Vice-President—A. C. Branch, Glennville.

Secretary-Treasurer—J. M. Hughes, Glennville.
 Delegate—L. V. Strickland, Cobbtown.
 Alternate Delegate—A. C. Branch, Glennville.
 Censors—A. C. Branch and R. B. Kicklighter.

Glynn County Medical Society

The Glynn County Medical Society announces the following officers for 1937:

President—M. E. Winchester, Brunswick.
 Vice-President—Webb Conn, Brunswick.
 Secretary-Treasurer—T. V. Willis, Brunswick.
 Delegate—H. M. Branham, Brunswick.

Walker County Medical Society

The Walker County Medical Society announces the following officers for 1937:

President—Chas. W. Stephenson, Ringgold.
 Vice-President—D. W. Hammond, LaFayette.
 Secretary-Treasurer—R. C. Shepard, LaFayette.

Bartow County Medical Society

The Bartow County Medical Society announces the following officers for 1937:

President—W. E. Wofford, Cartersville.
 Vice-President—J. W. Stanford, Cartersville.
 Secretary-Treasurer—T. Lowry, Cartersville.
 Delegate—J. W. Stanford, Cartersville.
 Alternate Delegate—T. Lowry, Cartersville.
 Censors—W. E. Wofford, R. E. Adair and J. W. Stanford.

Talbot County Medical Society

The Talbot County Medical Society announces the following officers for 1937:

President—J. E. Peeler, Woodland.
 Secretary-Treasurer—Wm. P. Leonard, Talbotton.
 Delegate—G. L. Carter, Talbotton.

Laurens County Medical Society

The Laurens County Medical Society announces the following officers for 1937:

President—J. A. Bell, Dublin.
 Vice-President—Wm. C. Thompson, Dublin.
 Secretary-Treasurer—R. G. Ferrell, Jr., Dublin.
 Delegate—J. E. New, Dexter.
 Censors—J. E. New, Wm. C. Thompson and E. B. Claxton.

Taylor County Medical Society

The Taylor County Medical Society announces the following officers for 1937:

President—Frank H. Sams, Reynolds.
 Vice-President—S. H. Bryan, Reynolds.
 Secretary-Treasurer—R. C. Montgomery, Butler.
 Delegate—S. H. Bryan, Reynolds.

Richmond County Medical Society

The Richmond County Medical Society announces the following officers for 1937:

President—L. P. Holmes, Augusta.
 Vice-President—Irvine Phinzy, Augusta.
 Secretary-Treasurer—Thos. W. Goodwin, Augusta.
 Delegate—Ralph H. Chaney, Augusta.
 Delegate—G. Lombard Kelly, Augusta.
 Censors—Edgar R. Pund, J. Righton Robertson and George A. T aylor.

BOOK REVIEWS

REPORTS ON CHRONIC RHEUMATIC DISEASES. The Annual Report of the British Committee on Chronic Rheumatic Diseases—Vol. I—159 Pages—\$4.00. Vol. II—140 Pages—\$3.50. Edited by C. W. Buckley, MacMillan & Co., New York City, 1936.

Articles by twenty different authors presenting the present-day conception of chronic arthritis, a resume of recent research work, suggestions for further research work, and references to the year's literature. There are presented the revised classification of the chronic arthritides; theories of etiology; the pathology in detail, biochemical investigations; a discussion of liver efficiency in cases of arthritis; the role of the parathyroids in arthritis; and a chapter on nervous manifestations.

Of especial interest are the chapters on "Ankylosing Spondylitis," "The Use of Histamine in Chronic Arthritis," "The Tuberculous Factor in the Etiology of Certain Cases of Rheumatoid Arthritis," "The Prevention and Treatment of Deformities," and a chapter presenting evidence to show that chronic infectious arthritis is caused by many different organisms.

These books contain much valuable information to all physicians, but certainly should be in the library of all who are interested in research work in arthritis.

HAL M. DAVISON, M.D.

ALLERGIC DISEASES, THEIR DIAGNOSES AND TREATMENT, By RAY M. BALYEAT.—4th Edition—516 Pages—132 Illustrations, F. A. Davis & Co., Philadelphia, Pa., 1936.

An excellent book written with a simplicity that gives an ease of comprehension and with a charm that makes reading it good entertainment. It covers all phases of allergy, giving a thorough discussion of etiology, symptomatology, diagnosis and treatment; written for both the general practitioner and for the specialist on allergy.

There are also many chapters valuable for the use of patients. Of especial interest are the chapters on "Differential Diagnoses," "The Role of Fungi and Insects in the Production of Allergic Manifestations," "The Use of Iodized Oil in the Treatment of Asthma," "Drug Therapy," "Gastro-Intestinal Allergy," and the chapter on "Allergic Dermatoses."

HAL M. DAVISON, M.D.

MODERN TREATMENT AND FORMULARY, By EDWARD A. MULLEN, M.D., Publishers, F. A. Davis, Philadelphia, Pa.

In an age when prescription writing has become almost a lost art the average physician is often embarrassed by a lack of knowledge of what drug to use and how to use it. This book in a measure supplies this deficiency. Diseases are arranged alphabetically and cover every subject from abortion to x-ray burn. The treatment outlined is modern and up-to-date, and each disease entity carries with it a short treatise on diagnosis. There is a separate section on diet. In addi-

tion there are articles on such subjects as baths, miscellaneous emergencies, poisons, weights and measures, temperature, pulse, etc.

This is a handy little book and is a veritable mine of useful information presented in a concise, practical manner.

C. M. WEST, M.D.

NEWS ITEMS

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on December 29th. Dr. T. H. Johnston, Douglas, Secretary-Treasurer, submitted official annual report. Eleven meetings have been held during the year. Thirteen papers were read by members and visitors. Officers were elected for the ensuing year. The Society entertained the Eighth District Medical Society on October 13th.

THE EQUEN MEMORIAL LECTURE will be delivered at the Academy of Medicine, Atlanta, by Dr. Chevalier Jackson, Philadelphia, Pa., February 11th. Title of address will be *Pulmonary Abscess in Adults and Children Based on a Series of Clinical Observations*. The lecture is intended for the general practitioner as well as the specialist. All members of the Association are invited.

THE THOMAS COUNTY MEDICAL SOCIETY met at the Archbold Memorial Hospital, Thomasville, on December 16th. Dr. Ernest F. Wahl and Dr. C. K. Wall were appointed as a Nominating Committee to nominate officers for the ensuing year. Dr. Roy Hill made a preliminary report on the *Malaria Survey*; discussed by Dr. W. W. Jarrell, Dr. F. H. Brooks, Dr. McGahee, Dr. Ernest F. Wahl and Dr. J. N. Isler. Dr. Thomas Harrold, Macon, spoke on the *Changing Ideas of Malignancies*. Dr. Ernest F. Wahl talked on the *Use and Abuse of Electrocardiography*. All members and guests were entertained at a dinner and dance at the Country Club. The next meeting of the Society will be held in Thomasville on March 17th.

THE UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE, Augusta, offers a post-graduate course in *Sex Endocrinology and Pathology*; *Diagnosis and Treatment of the Newer Venereal Diseases* — Chancroid, Granuloma Inguinale and Lymphopathia Venerea. Courses will be given March 1st to 5th, inclusive.

DR. JOSEPH B. POMERANCE, formerly of Columbus and more recently assigned to the Station Hospital at Fort Benning, has been given duties with the U. S. P. H. S. and assigned to service at the Marine Hospital at Cleveland, Ohio.

THE MUSCOGEE COUNTY MEDICAL SOCIETY sponsored a lecture by Dr. Victor G. Heiser, New York City, at Columbus on December 19th. In the announcement and invitation to the public, the Society gave out the following statement: "The lecturer, Dr. Victor G. Heiser, is the most outstanding person of this age, in the field of international health. That he spent more than 35 years in many countries working to eradicate many deadly diseases, among them being smallpox, plague and cholera, is sufficient introduction to his qualifications."

THE FLOYD COUNTY MEDICAL SOCIETY held its annual meeting in Rome on December 17th. Officers were elected for the ensuing year.

DR. AND MRS. KENNETH MCCULLOUGH, Waycross, entertained the members of the Society at their home on January 6th. Dinner was served. Interesting cases were reported and discussed.

DR. JAS. J. CLARK, Atlanta, has been elected President of the Emory University Hospital staff for 1937; Dr. I. A. Ferguson, Atlanta, Vice-President; Dr. H. H. Allen, Decatur, re-elected Secretary-Treasurer.

THE MACON MEDICAL SOCIETY of Bibb County held its annual banquet at the New Yorker, Macon, on December 15th. Officers for 1937 were installed.

THE WAYCROSS SERVICE LEAGUE WELL BABY CLINIC began operation in Waycross in March, 1936. It announces that to date 115 babies under two years of age have been enrolled, ten of whom have been dismissed at the age of two with duly authorized health certificates.

THE BROOKS COUNTY BOARD OF HEALTH met in the office of Dr. J. R. McMichael, Quitman, December 8th.

DR. A. A. MORRISON, Savannah, Alderman and Chairman of the Health Committee of the City Council of Savannah, attended a National Health Conference at Washington, December 28-30.

~ DR. DOUGLAS B. KENDRICK, JR., Atlanta, has been given First Lieutenant's commission in the Medical Corps of the U. S. Army and assigned to duty at Fort Monroe, Va.

DR. AND MRS. R. B. GILBERT, Greenville, entertained the members of the Meriwether County Medical Society to a turkey dinner on December 7th. Dr. W. A. Selman and Dr. Jas. N. Brawner, Jr., both of Atlanta, were guests.

DR. JAMES L. JENNINGS announces his association with Dr. Guy D. Ayer, 152 Forrest Avenue, N. E., Atlanta, for diagnosis and treatment of diseases of the eye, ear, nose and throat.

THE EMORY UNIVERSITY HOSPITAL STAFF met on January 4th. Dr. C. H. Paine reported a case, *General Carcinomatosis*; discussed by Dr. M. K. Bailey and Dr. R. R. Kracke. *Malaria Symposium* by Dr. J. H. Lange, Jr., Dr. T. F. Sellers, Dr. F. M. Atkins and Allen E. Hauck.

THE GWINNETT COUNTY MEDICAL SOCIETY met in the office of Dr. D. C. Kelley, Lawrenceville, on December 18th. Dinner was served at the Button Gwinnett Hotel. Dr. C. C. Aven and Dr. W. A. Selman, both of Atlanta, were visiting guests. Officers were elected for the ensuing year.

DR. J. S. NEW, son of Dr. and Mrs. J. E. New, Dexter, has been appointed Assistant Resident Physician at the University Hospital, Augusta.

DR. T. H. CHESNUTT, Moultrie, Colquitt County Commissioner of Health, was elected Worshipful Master of Moultrie Lodge No. 381, F. & A. M.

THE CHATTOOGA COUNTY MEDICAL SOCIETY held its annual meeting in Summerville in December. Officers were elected for the ensuing year. Dr. Wm. P. Harbin, Jr., Rome, was the guest speaker at the Society's monthly meeting held on January 13th. Title of address was *Interpretation of Electrocardiograms*.

DR. M. E. WINCHESTER, Brunswick, Glynn County Commissioner of Health, spoke before a recent meeting of the Brunswick Kiwanis Club on the *Prevalence of Syphilis*.

THE FULTON COUNTY MEDICAL SOCIETY held its thirty-second annual meeting at the Piedmont Driving Club, Atlanta, on December 7th. The program consisted of: Installation of Officers for 1937; Inaugural Address of President, Dr. H. C. Sauls; Announcement of Committees for 1937; Address by Guest Speaker; Award of Certificates of Honorary Membership; Presentation of President's Key to Dr. Grady E. Clay by Dr. Ben Hill Clifton, retiring Chairman of the Board of Trustees; Report of the Committee on the Dr. L. C. Fischer Awards by Dr. F. K. Boland; Miscellaneous Business.

DR. A. C. COLSON, formerly of Odum, has moved to Hinesville and will continue the practice of medicine at the later location.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on January 7th. Dr. L. R. Massengale read a paper on *Eclampsia*.

THE PIEDMONT HOSPITAL CLINICAL SOCIETY, Atlanta, met on December 14th. Officers elected for the ensuing year were: Dr. Wm. Willis Anderson, President; Dr. Carter Smith, Vice-President; Dr. W. E. Mitchell, Secretary.

DR. NEWDIGATE M. OWENSBY, Atlanta, has been appointed consultant in psychiatry in the Division of Mental Hygiene in the Atlanta Division of the U. S. P. H. S.

DR. RICHARD BINION, Milledgeville, has been appointed Lieutenant-Colonel on the staff of Governor E. D. Rivers.

THE PARENT-TEACHER ASSOCIATION of Jesup sponsored a medical and dental clinic at the Jesup High School on December 4-9. Medical examinations were made by Dr. J. T. Colvin, Dr. A. J. Gordon, Dr. J. A. Leaphart and Dr. T. G. Ritch.

DR. ALBERT N. DYKES, Columbus, was elected a member of the Muscogee County Board of Health for a term of four years.

DR. S. CLIFFORD RUTLAND, LaGrange, spoke before a meeting of the West Point Parent-Teacher Association, December 17th, on *Childhood Tuberculosis and the Benefit of Tuberculin Tests*.

THE E. BATES BLOCK LECTURESHIP COMMITTEE announces that Dr. Henry W. Woltman, Associate in Neurology at the Mayo Clinic, Rochester, Minn., will be its next guest speaker at the Academy of Medicine, Atlanta, Thursday, January 28th at 8:00 P. M. The subject of his address will be *Postoperative Neurologic Complications*. Dr. Woltman has been a member of the staff of the Mayo Clinic for a number of years and

is recognized as one of the outstanding neurologists of this country. All members of the Association are cordially invited.

MEAD JOHNSON AND COMPANY, Evansville, Indiana, offered an award of \$15,000.00 in January, 1932, to that investigator or group of investigators who should produce the most conclusive research on the vitamin A requirements of human beings. This award will be made on the basis of papers published or accepted for publication by December 31, 1936.

DR. THOS. BOLLING GAY, Atlanta, has been elected chairman of the Fulton County Board of Health.

THE HABERSHAM COUNTY MEDICAL SOCIETY met at Alto on January 14th. Officers were elected for the ensuing year.

THE HALL COUNTY MEDICAL SOCIETY met at Gainesville on January 6th. Officers were elected for 1937. The Society unanimously endorsed the legislative program of the Association.

THE STAFF MEETING OF GRADY HOSPITAL, Atlanta, was held on January 12th. The scientific program consisted of: *Presentation of Pathological Specimen* by Dr. Warren B. Matthews; case report, *Pregnancy Complicated by Hypertension and Tumor of the Lung* by Dr. Hugh Wood, Dr. Hollar and Dr. Keramidas; *Presentation and Discussion of Cases of Lymphogranuloma* by Dr. Jas. N. Brawner, Jr., and Dr. Keramidas. The discussion was led by Dr. E. D. Colvin. Officers of the Staff are: Dr. Earl Floyd, President; Dr. Wm. W. Bryan, Secretary.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on January 12th. Dr. S. E. Wilson read a paper entitled *Treatment of Specific Anterior Urethritis and Its Complications*; the discussion was led by Dr. L. W. Shaw and Dr. H. Y. Righton. Dr. Wm. H. Myers reported a case, *Buerger's Disease*.

DR. H. D. ALLEN, JR., Milledgeville, attended a joint session of the New York Neurological Society and the New York Psychiatric Society held in New York City recently.

DR. A. G. THURMOND, formerly of Waynesboro and an excellent Secretary-Treasurer of the Burke County Medical Society, has removed to Augusta and opened offices at 1345 Greene Street.

DR. J. E. POWELL, Villa Rica, has been appointed surgeon for the Civilian Conservation Camp near Villa Rica.

OBITUARY

Dr. Thomas G. Underwood, Maysville; Emory University School of Medicine, Emory University, 1885; aged 78; died in a private hospital in Hoschton on December 10, 1936. He was born and reared in White County. Dr. Underwood practiced medicine at Maysville for forty years until he retired. He did an extensive practice in Banks and adjoining counties. His life was devoted to his practice and friends. Surviving him are one son, Frank Underwood, two brothers and several grandchildren. Burial was in the village cemetery.

Dr. James Edward Pounds, Decatur; Atlanta College P. & S., Atlanta, 1911; aged 49; was killed in an

automobile accident near Flomaton, Alabama, on December 23, 1936. He was a native of Lilburn, Georgia. Dr. Pounds was an active and successful practitioner in the vicinity of Decatur, Avandole Estates and Stone Mountain. Surviving him are his widow, two daughters, Mrs. Jack Phillips and Miss Hortense Pounds. Funeral services were conducted from the First Methodist church by Rev. S. D. Cherry and Rev. P. F. Conley. Interment was in the Decatur cemetery.

Dr. John Franklin Powell, Eastman; member; Southern Medical College, Atlanta, 1886; aged 77; died at his home after a long illness on November 28, 1936. He practiced in Wilcox and adjoining counties for a number of years before removing to Eastman. After he moved to Eastman his services extended beyond the boundaries of his home county. He was favorably known to hundreds of friends, public spirited and one of the State's best citizens. Surviving him are his widow, one son, George Powell; and one sister, Mrs. M. M. Blackwell, Atlanta. Funeral services were conducted from Friendship church by Rev. R. G. P. McKinnon. Burial was in the Pope cemetery near Finleyson.

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The Council cooperates, through the N. N. R. and in other ways, with the U. S. Pharmacopœia Board, testing and evaluating scores of new products which appear during the 10-year interim between Pharmacopœial revisions.

We are conscious of the fact that the Council has at times been criticized both in and out of the medical profession. We hold no brief for perfection in any human agency. But we subscribe to the fact that the work of the Council is sound in principle; and in this high-pressure day and age, we shudder to think of a return to the proprietary-medicine-quack-nosttrum conditions of over thirty years ago, when there was Babel instead of Council.

THE RELATION OF ANEMIA TO PREGNANCY AND MENSTRUATION

The incidence of anemia among normal women of the poor classes in Aberdeen with reference to its relationship to pregnancy and menstruation is reported by Fullerton (British Med. J.,—Sept. 12, 1936).

The hemoglobin values of 1,534 women were included in the study. When charted by age groups, the non-pregnant women between 15 and 19, at the start of reproductive life, showed an average hemoglobin value of 83 per cent (11.5 g.), 15 per cent below the Price-Jones average for normal women. In the older groups the hemoglobin level progressively decreased, reaching the low of 77 per cent (10.6 g.), 21 per cent below normal at age 40 to 44. After the menopause the hemoglobin rose, since the demands for iron were materially decreased.

The values for pregnant women paralleled those for non-pregnant women, but were approximately 5 per cent lower. Although the incidence of anemia in non-pregnant women was less than in pregnant women, the number of severe cases, hemoglobin below 50 per cent (6.9 g.), was greater. Blood examinations and therapeutic iron administration showed that the anemia was clearly attributable to iron-deficiency caused by the low iron content of the diet. Thus both pregnant and non-pregnant women were in negative iron balance throughout reproductive life.

A careful investigation into the total iron demands made in pregnancy by the fetus and tissues, by blood loss at parturition and by lactation showed that in many cases pregnancy did not constitute as great an iron demand as did menstruation. Thus normal menstrual blood loss often produces iron-deficiency, and even in the better classes, profuse menstrual blood loss may lead to hypochromic anemia.

It is concluded that anemia has a high incidence among the poor classes of women caused by a combination of poor diet and iron loss during reproductive life. Menstruation apparently constitutes an iron loss at least as great as pregnancy, and diet is often inadequate to meet the iron demands of either.

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HERNIA CLINIC

A hernia clinic with ample subjects showing all types of hernia with an opportunity for each attending physician to actually do the work under the supervision of medical men who have practiced the injection method for from five to twenty-five years is proposed for this coming February under the sponsorship of Pina-Mestre Clinics, Inc., of Orlando, Fla. The charges will be nominal and you are thus afforded an opportunity to visit Florida, where summer spends the winter and, at the same time, learn the technic for a practice where your first patient will pay all expenses.

Owing to the necessity for limited classes it is possible that more than one class will be handled. For full information, write to Wythe D. Sims, President, P. O. Box 1178, Orlando, Fla., or see the official announcement in the January 1937 issue of this Journal.

BENZEDRINE SULFATE IN MOOD AND FATIGUE

Myerson (Arch. Neur. & Psych., 30:816, October, 1936) suggests the use of Benzedrine Sulfate (benzyl methyl carbinamine sulfate S.K.F.) to alleviate certain types of fatigue and depression.

When administered to normals suffering from fatigue and slight malaise due to insufficient rest or sleep, immediate benefit and relief of a pleasant type were experienced. To obtain this result 10 mg. upon arising was usually sufficient. The effect lasted two hours or more. A dose of 30 mg. was apt to produce restlessness and over-excitability; and sleeplessness at night followed administration in the late afternoon. No ill effects and no signs of craving were noted in any of the patients. Blood pressure was not appreciably affected by 10 mg., but a rise sometimes followed a 20 mg. dose, and the use of the drug in the presence of hypertension is inadvisable. As an emergency measure for normals to dissipate the effects of a disordered night's sleep or of insufficient rest, the drug is probably of benefit.

Benzedrine Sulfate was also given to a group of cases suffering from neuroses associated with depression, fatigue and anhedonia. Although the difficulty of a scientific evaluation of treatment in neuroses is recognized, Benzedrine seemed to have an ameliorative effect with a definite though limited value.

In only two cases was its action unfavorable. Its effects were not curative or permanent, but it tended to lessen the depression and increase the feeling of energy. Given in small divided doses in the morning its use is suggested during treatment by other means and while natural recovery is taking place.

In eighteen cases of dementia praecox, Benzedrine Sulfate was found to be without effect on catatonic or hebephrenic states.

HONOR ROLL FOR 1937

1. Randolph County, Dr. W. G. Elliott, Cuthbert, September 28, 1936.
2. Dougherty County, Dr. I. M. Lucas, Albany, December 12, 1936.
3. Taylor County, Dr. R. C. Montgomery, Butler, January 11, 1937.
4. Crisp County, Dr. L. O. Wooten, Cordele, January 13, 1937.

The E. Bates Block Memorial Lecture will be delivered by Dr. Henry W. Woltman, Rochester, Minn., at the Academy of Medicine, 38 Prescott Street, N. E., Atlanta, on January 28th at 8:00 P. M. He will speak on *Postoperative Neurologic Complications*. Dr. Woltman has been a member of the Staff of Mayo Clinic for a number of years.

The Jonte Equen Memorial Lecture will be delivered by Dr. Chevalier Jackson, Philadelphia, Pa., at the Academy of Medicine, Atlanta, on February 11th, at 8:00 P. M. Title of address will be *Pulmonary Abscess in Adults and Children Based on a Series of Clinical Observations*.

YOUNG PHYSICIAN WANTED

If you are a good young physician and would like a better location for the coming year, write "B," care of THE JOURNAL.

Orders taken for the Modern Psychologist, Psychology and Nautilus; Journals for professional offices; also for the two books, Sing Sing Criminals and Neurotic Homosexuals, \$2.50 each. Samuel Kahn, M.D., 80 Peachtree Place, Atlanta, Ga.

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THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., February, 1937

Number 2

TUMORS OF THE ADULT KIDNEY*†

Report of Cases

EARL FLOYD, M.D.
JAS. L. PITTMAN, M.D.
Atlanta

This paper is based on the study of nine adult patients with tumor of the kidney, two of whom represent five-year cures. We wish to suggest pyelography as the most valuable method now available for diagnosing early renal tumor and nephrectomy as the best method of treatment.

Pathology

Most neoplasms of the kidney can be classified as *carcinoma*, *sarcoma* and *papillary carcinoma* of the renal pelvis. Regarding the origin of renal carcinoma, one becomes confused concerning the many theories advanced. Fifty years ago Grawitz stated that the so-called hypernephroid tumors were of adrenal origin, arising in aberrant "rests" of renal tissue. This view was held by some pathologists for a long time, but accepted opinions now indicate that these tumors are derived from renal tissue.

Foulds divides renal carcinoma into two distinct groups according to two types of cells. Hunt separates them into adenocarcinoma and alveolar carcinoma. Others recognize only one type and include all solid epithelial tumors under adenocarcinoma. Bugbee and McKay believe the reason for the confusion is: "in various sections of the same tumor one finds totally different types of cells and totally different cell patterns and cell arrangements." This is in accord with Balch's patient, in whom he reported papillary carcinoma and hypernephroma occurring in the

same kidney. Again, Bugbee and McKay state: "there may also exist in a section areas which closely resemble round cell sarcoma," which may account for some cases reported as sarcoma.

According to the literature, true sarcoma of the kidney is relatively rare. Hunt and Hagar reported ten cases of sarcoma found in 271 patients with renal tumor. Eisenstaedt states: "true sarcomas of the kidney are usually unilateral, may reach considerable size, and most frequently arise from the parenchyma, though they may have their origin in the connective tissue around the large blood vessel at the hilus, or from the true capsule. They may appear in two forms: the *infiltrating* and *circumscribed*. Spindle cell sarcoma is the most frequent form, mixed cell next, and round-cell comprises the smallest group." We believe that Case 4 of our series had a sarcoma.

The most interesting cases are neoplasms of the pelvis of the kidney. They are uncommon. Hunt reports that only 7 per cent of kidney tumors studied at the Mayo Clinic arose from the pelvis. The most common type is the one having a papillary structure. Meltzer found only one case of papillary tumor of the pelvis in the study of 94 cases of pelvic tumor taken from the records of the Massachusetts General Hospital. Thomas and Regnier were able to find 248 cases of tumor of the pelvis in the literature. According to LeComte, these neoplasms are similar in structure to those occurring in the bladder. They have a tendency to invade the ureter and bladder. Whenever a growth is found around the ureteral orifice one should always determine if it is secondary to a pelvic tumor. One should be able to differentiate between a pelvic and a cortical tumor. In Case 3, we are reporting a tumor of the pelvis with two transplants in the bladder.

In reviewing the various reports our deductions are as follows: carcinoma constitutes

†Department of Urology, Emory University School of Medicine, Atlanta.

*Read before the Medical Association of Georgia, Savannah, April 23, 1937.

about 91 per cent of all cases, papillary carcinoma of the pelvis 6 per cent and true sarcoma about 3 per cent.

Etiology

The etiology of neoplasms of the kidney is just as obscure as the cause of new-growths elsewhere. Chronic irritation over a long period of time and trauma have been suggested as factors. Stones have been present in about 15 per cent of renal neoplasms and Braasch stated that stone in the kidney, even though symptomless, is not necessarily harmless, for in later years it may set up an irritation and be a factor in the production of a neoplasm. Infection has also been cited as a factor. With lack of knowledge of etiologic factors, it behooves us to remove all irritants that may give rise to production of a new-growth.

Symptoms

The three leading symptoms of renal tumors in the adult are: *hemorrhage*, *tumor* and *pain*. The hemorrhage may be intermittent or continuous, slight or massive, and secondary anemia may be marked. According to Squier, profuse, or even fatal, hemorrhage may occur. (In Case 8 of our series profuse hemorrhage was the cause of death.)

The tumor, when felt, is usually a hard mass in one or the other side of the abdomen, and can usually be felt both in front and behind. Frequently the tumor reaches considerable size and sometimes extends to the other side of the abdomen and below the umbilicus to the crest of the ilium; it may be movable or fixed, depending upon the surrounding adhesions. The pain is usually dull in character, due to pressure of the tumor; only rarely is it acute and then it is due to an infection, hemorrhage, or clot caught in the ureter.

When these three cardinal symptoms—*hemorrhage*, *tumor* and *pain*—are present, the diagnosis is obvious. An attempt should be made to diagnose the condition before these are all present, for they may represent advanced disease. For example, when the tumor is palpable one must assume that the growth has been present for some time. In Case 1 of our series no palpable tumor was present, subjectively or objectively. Hemorrhage was the only symptom present, which, according to Kretschmer, occurs in 74 per cent of such

patients. The early occurrence of bleeding in our patient was a favorable factor, as it alarmed him and was a signal for us to subject him to cystoscopy. The cystoscopic data are extremely significant because the patient may have a good functioning kidney in spite of the fact that a tumor is present.

It is surprising that some patients with renal neoplasm have few symptoms. Two of our patients were not anemic and had no loss of appetite or any symptoms of a general nature. The only things they complained of were a tumor mass and blood in the urine, over a period of years. Some patients may be absolutely symptomless. Huggin's patient, reported by Wilson, was symptomless and was found during a periodic health examination. Cases are found occasionally at autopsy, as in Case 9 of our series.

Fever is another symptom noted by a number of authors. Hyman reported a case in which fever was the predominant symptom. Israel observed characteristic fever curves, remittent and intermittent, in 18 patients. He states that fever occurs in all renal carcinoma without relation to structure, rapidity of growth, invasion, etc. Jungelin's patient had none of the cardinal symptoms, only an elevated temperature over a period of time. Roentgenogram of the abdominal cavity and routine examination disclosed some enlargement of the left renal shadow. At operation a tumor was found to be present. In Case 4 of our series the patient had one of the symptoms, an elevated temperature, over a period of three weeks, and an abscess was suspected at first rather than a neoplasm. Cabot reported a high leukocytosis in several patients with renal tumor. Cachexia is part of the picture. Vomiting is not infrequent and may simulate gastric cancer. Squier reported one case of vomiting of several weeks' duration, increasing weakness and loss of weight, a kidney not palpable, urine normal, and a test meal that showed an absence of hydrochloric acid. P. Albrecht reported a similar case. Both of these patients had renal neoplasm as a causative factor. The frequency of hypertension that has been noted by others, has not been found present by Braasch and Griffin.

Diagnosis

The diagnosis is made from the history,

physical examination, cystoscopy, renal function test, microscopic study of the urine, careful interpretation of pyelograms and, not infrequently, at operation. *Pyelography is the most valuable method of diagnosis in early renal tumors.* In fact, it is the most accurate means we have of determining the condition of kidney tumor during life and in practically every case it will show some renal deformity. Various deformities are produced by the different pathologic processes to which the kidney is heir and, of course, one should make a special study of these deformities in order to interpret them correctly. In the very beginning of renal tumor, pyelography shows a loss of the normal cupping of the calices, or a slight increase in size of one or more of these, as is evidenced in Case 1 of our series. These changes are also present in tuberculosis, hydronephrosis, pyonephrosis and cysts. The pelvis may become elongated, dilated and show filling defects. The most characteristic findings are: elongation of the calices, displacement and filling defects. Of course, filling defects may be due to insufficient filling of the renal pelvis or to the normal constrictions of the pelvis and calices and for this reason it is sometimes necessary to repeat the pyelogram.

It is sometimes easier to diagnose tumor of the kidney in the very beginning of the growth than after it has advanced. At first the pyelogram nearly always shows some change in a calix or in the pelvis. Occasionally the tumor may block the ureter and prevent one from getting information by this method. In one of our cases we believed that the kidney was destroyed because the ureter was blocked, but at operation a large new-growth was found. An intravenous pyelogram will frequently give insufficient information. In one of our patients this method caused a certain amount of error, but it should have suggested that a retrograde pyelogram be done. Not infrequently stones are found in the same kidney with the tumor, but such observations are more common with tumors of the renal pelvis. Sometimes a roentgenogram will show a stone and no pyelogram is made, and at operation a tumor is found. One must not depend entirely on a single picture, but must obtain consent to remove a new-growth in the event one is found at operation.

With new-growths there may be an abscess which will obscure the diagnosis for a while. One prominent urologist related an interesting experience to one of us. Perinephritic abscess was suspected in one patient because of the presence of fever, tenderness and leukocytosis. Coincidentally, a patient with a perinephritic abscess was in the ward at the same time who had the cardinal symptoms and appearance of a tumor of the kidney and both were diagnosed wrong until after operation.

According to Braasch, quoted by Bugbee, "The conditions which are more easily confused with renal tumors are: (1) hydronephrosis, (2) polycystic kidney disease, and (3) blood clots." As a rule, hydronephrosis can be determined by cystoscopy, microscopic examination of the urine, kidney function test and pyelogram. Polycystic kidney disease can be ruled out by the same procedure, by obtaining the function and pyelogram of both kidneys, since they are bilateral. Cases have been reported of carcinoma and polycystic kidney disease together. Blood clots will sometimes cause an error in diagnosis as was demonstrated in Case 7 of our series. Clots produce a filling defect, but if one takes into consideration the other methods of diagnosis they can be ruled out. Fragments of renal tumor are reported to have been in the urinary sediment, but we have never been able to make a diagnosis from this procedure.

Metastasis

Metastasis of the epithelial growth takes place by way of the renal vein. Of course, it may extend directly as well, by breaking through the capsule. Albrecht found the lungs involved in all of his advanced cases. Alborn, in 249 collected cases of renal carcinoma, found the lungs involved in 75, the liver in 71, the lymph nodes in 60, the renal vein and venacava in 23 and the pleura in 14. Bone metastases are chiefly in the spine, ribs, scapula, skull and long bones. In a well known group of cases a solitary bone tumor arises from a comparatively small renal growth.

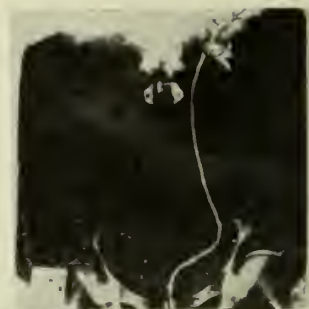
According to Eisenstaedt, metastasis of sarcoma, when it occurs, is totally different from the metastasis of adenocarcinoma or hypernephroid tumors. Sarcoma metastasis

shows a tendency to spread by direct extension and invasion rather than through the lymphatics or blood vessels. This characteristic is in sharp contrast to the metastasis from epithelial malignancies of the kidney, which may appear before the patient has had his attention called to the urinary tract by bleeding, pain or tumor. This sequence would be extremely rare in sarcoma, and as far as has been determined, has not been reported. The renal vein is usually not involved. Extension to the liver and to adjacent structures has been reported in four of the eight cases reported by Hunt and Hager. Metastasis from tumors of the kidney pelvis is observed in adjoining lymph nodes, peritoneum, liver, lungs, etc., and also in the ureter and bladder by means of transplants. X-ray study of a renal tumor is incomplete unless roentgenograms of the chest and long-bones, especially of the femur, have been made to locate metastasis. The knowledge of the presence or absence of metastasis is of vital importance, not only in the diagnostic procedure but in the consideration of the type and kind of treatment to be recommended.

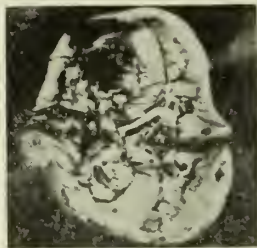
Treatment

There is no question that nephrectomy offers the best hope of a cure. According to Hunt, nephrectomy is accompanied by a high percentage of cures when instituted early in the disease and while it is confined to the kidney. In some cases it is resorted to too late—the disease has progressed beyond and outside of the renal capsule, either by direct invasion of the surrounding structure, or by hematogenous or lymphatic invasion. His report shows that he has performed 157 nephrectomies for tumors; 85 per cent were carcinoma, 10 per cent epithelioma and 4.4 per cent sarcoma. The Mayo Clinic reports show 45 per cent of their patients operated upon for renal tumor, removing the kidney, have lived five years or more. Only 17 per cent of the inoperable cases treated by roentgen-ray and radium lived five years or more. A sufficient number of successful cases of nephrectomy for renal tumors has been done to emphasize the value of the operation.

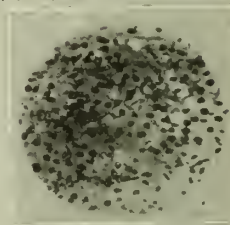
Two methods of surgical approach to the kidney exist: the lumbar, or paraperitoneal, and the transperitoneal. The lumbar route is planned so as to avoid opening the peri-



CASE I FIG. I



CASE I FIG. 2



CASE I FIG. 3

toneum, contemplating danger of infection to the peritoneal cavity if the kidney contains bacteria. This has caused most surgeons to lean toward the lumbar approach to the extent that the advantages which have remained to the transperitoneal route are today almost entirely overlooked. Some of the advantages of the transperitoneal operation are: in renal tumors care must be taken not to disseminate the tumor cells into the blood stream. It is well known that renal neoplasm has a tendency to grow into the veins and thus be transported to more distant regions of the body. During the manipulation of freeing such a tumorous kidney it is highly probable that cells may be displaced and be carried through the venous blood stream. Sometimes the growth is too large to be removed entirely through the lumbar incision, so the procedure of ligation of renal vessels as the primary attack on a nephrectomy for renal tumor is important and should be carried out as the first step. The renal vascular pedicle is easily reached through the retroperitoneum by trans-abdominal approach.

The evaluation of x-ray and radium therapy in the treatment of adults with tumor of the kidney has been reported by various authors. Waters, Lewis, and Frontz believe that cortical renal tumors are extremely radiosensitive. Their prompt response and striking conversion from an inoperable to an operable tumor at once suggest the advisability of irradiating preoperatively all tumors of



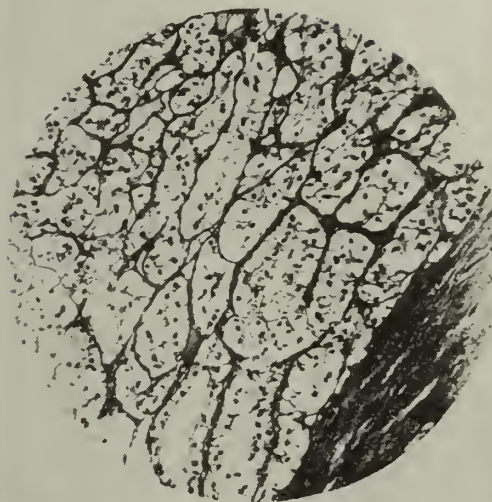
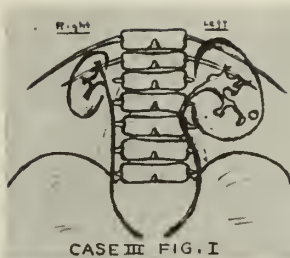
this type, not with the idea of simplifying nephrectomy but with the view of devitalizing the tumor and thus minimizing the risk of metastasis. According to Waters, and others, when the diagnosis of renal tumor is definitely established, it is desirable, because of the selective action of roentgen-ray for certain types, to attempt a differentiation between the radiosensitive and the radioresistant tumors.

Postoperative irradiation to eliminate possible "rests" that have been overlooked or deliberately left behind, seems to be indicated, according to LeComte. The percentage of cures will probably not be materially increased until earlier diagnosis makes possible the institution of treatment before metastasis has occurred. As a rule, metastasis precludes nephrectomy—not always, however. There are certain contraindications to nephrectomy other than metastasis, such as a poor general health of the patient and inadequate kidney function in the opposite kidney. The operation must justify the risk. Improved mortality statistics will undoubtedly come from earlier diagnosis and operation.

We recommend that all tumors of the kidney be regarded as potential malignancies and that the patient be operated upon unless there are contraindications.

Report of Cases

Case 1. Brand, male, aged 44 years. Symptoms:



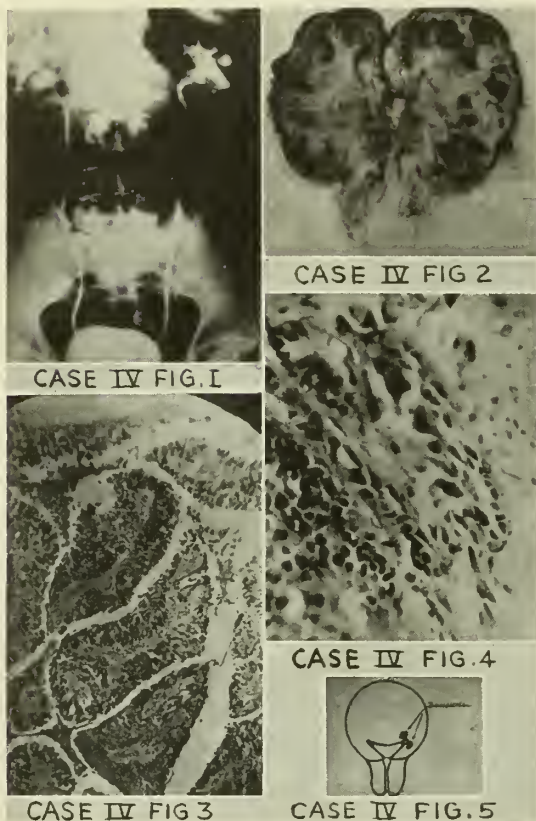
Hematuria (two weeks), no tumor or pain. Urologic findings: Right kidney specimen showed many red blood cells. (T.B. and guinea pig inoculation negative). The kidney function was practically normal. Pyelogram showed a deformity of the superior calix of the right kidney. Metastasis: X-ray of the skull, chest, and long bones did not reveal any evidence of new-growth. Treatment: Right nephrectomy (1928).

Pathologic report: The gross specimen of the kidney weighed 325 grams. The external surface was smooth. There was a protruding soft tumor mass midway between the pelvis and cortex, which was about 6 cm. in diameter. Cut surface showed a creamy, yellow new-growth. The section showed a very cellular tumor which was extremely vascular and moderately hemorrhagic. The composing cells were moderately large with cytoplasm almost clear and containing centrally located nuclei. The cytoplasm in many places was entirely without granules, while in a few areas there was a diffuse acidophile haze over the cytoplasm, but no distinct granules. Toward the edge of the section a distinct papillary arrangement was seen, the large cells appearing upright in regular order, their base being the stalk or the papilla with small capillaries. Other areas were not as typical, the arrangements of the cells being more irregular, although the individual cell remained the same. No attempt at tubule formation was seen. Connective tissue was scanty and mitoses were seen only occasionally.

Diagnosis: Papillary Carcinoma. (Clear cell type.)

Result: Apparently cured.

Case 2. Spivia, female, aged 30 years. Cardinal symptoms: Pain in right side, tumor, hematuria and



loss of weight. Urologic findings: There was a large mass in the right upper quadrant, extending down to the umbilicus, in front and to the crest of the ilium. The right kidney specimen showed many red blood cells and there was some impairment of function on this side. There was some deviation of the right ureter laterally in the upper part. The kidney pelvis was a large cavity with some filling defect. There was an elongation of the isthmus, which extended into the clubbed superior calix; other calices were obliterated. There were a few spider-web areas in the lower part. Metastasis: There was an increased density in the base of the right lung, which was evidently new-growth. There was also some evidence of beginning metastasis involving the bones of the arms and three small nodules were noted over the sternum. Biopsy of the sternum specimen showed tissue not unlike a hypernephroma.

Diagnosis: Hypernephroma, with metastasis. Result: Under x-ray therapy patient lived six months without other treatment.

Case 3. Floyd, male, aged 53 years. Cardinal symptoms: Tumor, hematuria. Duration: 12 months. Urologic findings: There was a mass felt in the left upper quadrant of the abdomen which extended down to a level with the umbilicus. It was firm and fixed. The left kidney specimen showed many red blood cells and there was some impairment in the function. Pyelogram of this kidney showed a very definite deformity of the lower calix with an elongation of the pelvis. There was a calcification about 2 cm. in diameter in the lower pole of the kidney. The upper portion of the left ureter was pushed medially. Metastasis: The lung structures were negative. There was

some enlargement of the mediastinal structures.

Treatment: Left nephrectomy (1930), followed by x-ray treatment.

Pathologic report: The kidney measured 15x11x7 cm., was irregular in shape and somewhat nodular; weight 625 grams. Cut surface showed considerable renal tissue remaining, but most of the organ was replaced by rounded, non-encapsulated tumor masses, varying in size from 1 to 3 cm., bright yellow and white in color, and without gross necrosis or marked cystic change. Small areas of hemorrhage could be seen in some portions. The renal pelvis was not invaded. Sections showed a neoplastic structure composed of masses of medium and large sized polyhedral-shaped cells, which were markedly clear, and showed very small, mostly centrally placed, nuclei. No granules were seen in the cells. The cells were closely attached to a stalk which contained vessels. A papillary tendency was seen in some portions, but the cells were largely fused with those of the adjacent vessel. No necrosis was seen, but there was extensive edema with basophilic reaction in the connective tissue stroma at the edges. The remainder of the renal tissue showed marked degenerative changes.

Diagnosis: Adenocarcinoma, with clear cells. It is difficult to determine the origin of this tumor, whether of renal or adrenal origin, but the structure seems to point more to the former.

Result: Apparently cured.

Case 4. Mathews, male, aged 59 years. (Dr. Milus Bailey's patient). Cardinal symptoms: Pain, hematuria. Duration: 6 months. No tumor. Urologic findings: The left kidney specimen showed many red blood cells. Pyelogram of the left kidney showed considerable destruction of the kidney with a marked filling defect of the dilated pelvis. Cystoscopic examinations revealed two transplants around the left ureteral orifice.

Treatment: Left nephrectomy and partial ureterectomy. Fulguration of transplants. Histologic study showed a tumor composed entirely of epithelial cells, which are quite large and of a uniform type and take an intense stain. Mitotic figures are commonly present. The cells are aggregated in and about thin stalk-like stomas, giving rise to papillary clusters.

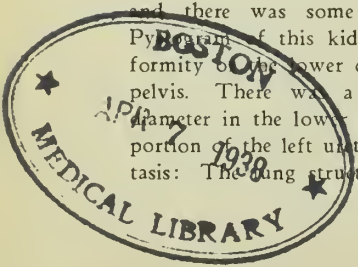
Diagnosis: Papillary epidermoid carcinoma.

Case 5. Parker, male, aged 47 years. Chief complaint: Pain in the left side of the abdomen. Tumor. Marked weakness and loss of weight. Temperature elevated. Duration of symptoms: 3 months. No hematuria.

Past history: For the past 14 years patient has had recurrent psoriasis. In 1914 he had an antrum operation; tissue removed was reported sarcomatous.

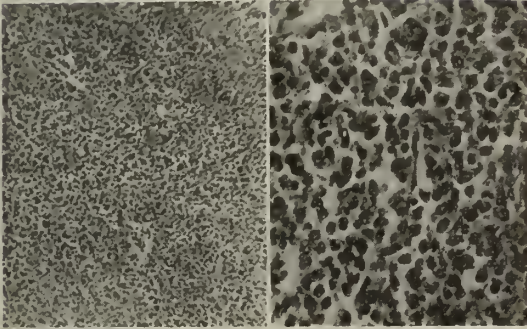
Physical examination: Examination revealed a large man showing a recent loss of considerable weight. Psoriasis present. Temperature 100; this had been elevated for the past several weeks. Gastro-intestinal examination showed the descending colon displaced upward and to the right.

Urologic findings: Patient had an atrophy of both testicles. There was a tender mass felt in the left side of the abdomen. The left ureteral catheter met an impassable obstruction 12 cm. up the ureter. The specimen collected showed numerous pus cells and





CASE V FIG. 1



CASE V FIG. 2

CASE V FIG. 3

organisms, but no red blood cells. The pyelogram showed marked deformity of the left kidney which was quite large. The solution outlined the kidney pelvis and calices, showing the pelvis to be dilated and the calices clubbed, particularly the superior ones. At a point just below the ureteropelvic junction some of the solution was seen to extend off laterally, evidently into the substance of the kidney, for a distance of 6 cm. The ureter just below the ureteropelvic junction showed a deformity.

Treatment: Left nephrectomy.

Description of specimen: Kidney measured 15x9 cm. in diameter and was soft and nodular. On section there was a large, grayish tumor-mass, measuring 10x5 cm., involving the renal pelvis and extending into the kidney substance. In fact, areas were seen throughout the entire kidney substance which were evidently an infiltrating growth. Microscopic section showed a very cellular growth, with small groups of rapidly growing cells.

Pathologic diagnosis: Round-cell sarcoma.

Case 6. A. N., male, aged 33 years. Cardinal symptoms: Mass in right side of abdomen, hematuria, pain. Duration: 3 to 6 months. Urologic findings: There was a tumor in the right side of the abdomen which extended about three fingers breadth below the costal margin, was rounded and quite firm. There was



some rigidity in the lumbar region. Ureteral catheterization revealed many red blood cells and low function from the right kidney. Pyelogram showed the left kidney to be normal. The pelvis of the right kidney was dilated and bifid, with finger-like projection of the calices. The terminal ends were clubbed.

Treatment: Right nephrectomy (1927).

Description of specimen: Kidney measured 13x8x8 cm. It was quite firm throughout. The cut surface was grayish in appearance and there were a few small areas of hemorrhage found. This kidney specimen was lost before sections could be made. It was our opinion from the gross specimen that it was a fibroma. The patient is alive and well after 9 years.

Case 7. Tanner, male, aged 42 years. (Dr. C. W. Roberts' patient). Chief symptoms: Shortness of breath and mass in upper left quadrant of the abdomen. Duration: 12 months.

Findings: Tumor in the left upper quadrant of the abdomen which was movable within restricted limits, was firm and showed calcium deposits. It was apparently retroperitoneal. Urine showed only normal elements. Examination of the heart did not reveal organic lesions. Blood count was satisfactory. No loss in weight. Intravenous urogram showed the left kidney to be in normal position, with no deformity of the pelvis or calices. The lower calices were not outlined distinctly. Retrograde pyelogram was not done.

Diagnosis: Retroperitoneal tumor. Cardiac neurosis. Operation: Transperitoneal nephrectomy.

Pathologic report: Gross specimen measured 12x7x5 cm. There was attached to the lateral margin of the kidney a large irregular lobulated tumor mass that measured 9x16 cm. The mass apparently arose from the cortex. The tumor was soft and dark-purplish in color. On section there was a number of small calcareous deposits. The cut surface was mottled in appearance and contained a number of dark-purple cysts. Microscopic sections consisted of massive groups of

CASE VIII



rather large epithelial cells having fairly large nuclei with rather dense granular cytoplasm. There was an attempt at reproduction of the kidney tubules but an absence of tubule lumens. Microscopic diagnosis: Hypernephroma.

Comment: This patient would have been difficult for diagnosis even though a retrograde pyelogram had been done, because the tumor had apparently not invaded the calices and might not have shown a deformity, and there was no blood seen in the urine. Dr. Roberts wisely selected the transperitoneal approach in this case because of the size of the tumor and the fact that the pedicle was not accessible. He was able to remove the growth with speed and dexterity.

Case 8. Mrs. A., aged 60 years. Chief complaint: Hematuria, tumor in left side of abdomen and pain. Duration: 6 to 12 months. Cystoscopic examination revealed considerable blood coming from the left kidney. Pyelogram showed a large left kidney with filling defects of the pelvis and calices.

Patient refused operation. She died following a massive hemorrhage. Cases have been reported in the literature in which massive hemorrhage was given as the cause of death.

Case 9. C.H.S., aged 50 years. Patient had no symptoms referable to the kidney and died of pneumonia. Slide shows histopathology as follows: The tissue was composed of rather large epitheloid-like cells, quite irregular in size, with well staining nuclei and mitotic cells occasionally present. The cells also have a slightly granular cytoplasm and appear to simulate cells possibly of a neurogenic nature, yet they undoubt-

edly are arising from aberrant adrenal medulla cells. Diagnosis: Carcinoma, medullary, adrenal in origin.

SUMMARY

Nine cases of neoplasm of the kidney are reported, two of which represent over five-year cures following nephrectomy, a method that we strongly advocate.

Stress is laid on pyelography properly performed and interpreted, as this is the most valuable method of diagnosis now available for recognizing early renal new-growths.

As a rule, renal tumor is diagnosed incorrectly in the beginning. When *pain*, *bleeding* and *abdominal tumor* are present the diagnosis is usually obvious and the prognosis is not good, especially if the tumor is fixed. Recognizing the condition in the beginning offers the best hope for cure.

Hematuria was the outstanding symptom in the cases reported. Even though the bleeding has ceased, a complete urologic study should be done, for months later the bleeding may recur. As one looks over the histories of kidney tumor cases he is impressed with the thought of how much better the patient would have been had an investigation been made when hematuria first appeared.

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Discussion on Paper of Drs. Floyd and Pittman

DR. J. RIGHTON ROBERTSON (Augusta): In discussing this paper so ably presented by Dr. Floyd, I

would like to present a few lantern slides taken from the Urologic Service of the University Hospital at Augusta, which I hope will serve to augment what has already been shown.

Case 1, Mrs. I. C.

Complaint: Pain over region of left kidney with tenderness upon pressure. X-ray shows a large tumor mass beneath the diaphragm, suggestive of an enlarged kidney. Cystoscopic examination: No urine from left kidney; free flow from the right, with many white blood cells, in clumps. Pyelogram: Left pelvis shows a trace; the right side holds 30 cc. Diagnosis: Hypernephroma, left kidney; hydronephrosis, right.

Case 5, J. H. D.

Complaint: Pain in left kidney region and intermittent hematuria. Cystoscopic examination: Blood seen flowing freely from left ureter. Catheter then passed with ease but was quickly clogged with blood. Flat film of urinary tract shows catheter pushed mesially and upward, reaching to the upper calix. Kidney is greatly enlarged, extending from the supercrest to a point about the eleventh rib. Pyelogram: With 45 cc. sodium iodide injected, shows the minor calices blunted and compressed. Diagnosis: Hypernephroma, nephrectomy.

Case 6, G. B., Male

Complaint: Pain in left upper quadrant and flank. Hematuria. Cystoscopic examination: Urine from right kidney very free; sluggish from the left. A trace of phthalein from the left side: Pyelogram: Intravenous (Diodrast) 10 minutes after injection, shows left kidney pushed outward and slightly upward by mass. Calices and pelvis spider-like, strongly suggesting kidney pathology, possibly hypernephroma. Right kidney and pelvis only partially filled. Retrograde pyelogram: Shows the right kidney pelvis and ureter well filled. Kidney is enlarged and pushed well to left side. Minor calices appear somewhat clubbed, and in the upper half of the kidney some of the opaque material appears to enter a pocket out of the pelvis, suggesting an infection rather malignancy. Operation: Left nephrectomy. Pathological report: Carcinoma, suppurative pyelonephritis.

Case 7, L. J., Female

Complaint: Pain in upper left quadrant and over left kidney region. Mass is felt below the left costal margin. Cystoscopic examination: No pus, blood or kidney elements. Pyelogram: Right pelvis holds 4 cc. skiodan. Middle major calix appears to be absent or improperly filled; the left side holds 10 cc. At operation an enormous tumor was found, which was found to be a hypernephroma, and inoperable. Deep x-ray therapy begun.

Case 8, W. E., Male

Complaint: Swelling in right upper quadrant extending down to crest of ilium. Cystoscopic examination shows an irregular enlargement of the right kidney, catheter being passed into the superior major calix. Injection skiodan shows a marked deformity from compression, pelvis being pushed toward the spine, suggesting a hypernephroma. Left kidney is not well defined, but appears enlarged. No urine was obtained from this side. Operation: An incision was made under local anesthesia and a large quantity of

thick chocolate colored material evacuated. Biopsy showed a hypernephroma. Patient died ten days later.

DR. RUDOLPH BELL (Thomasville): If I was not allowed to listen to another paper on this program or to participate in any of the social activities of the annual session of the Medical Association of Georgia, I would consider my expenses well repaid just by listening to the presentation of Dr. Floyd on tumors of the adult kidney.

Dr. Floyd spoke of the pyelogram as a diagnostic measure in making a diagnosis of tumor of the kidney. The two methods which we employ are the retrograde and the intravenous. I feel that the retrograde is far superior to the intravenous pyelogram. Too often from the intravenous pyelogram there will be a filling defect in the kidney, and if we relied solely on the intravenous pyelogram we would more often make a diagnosis of kidney tumor.

I believe Dr. Floyd spoke of the hematuria being present in 72 per cent of kidney tumors. If we do not grasp but one point, I think we should regard hematuria as a very grave symptom, and every patient with hematuria should have enough urologic investigation to make a diagnosis, and if no diagnosis is made he should have a complete urologic investigation. Too often we see patients who have had bleeding from the bladder or kidney periodically over a period of years, and on questioning them we find that they have had this hematuria and have been given medicine at several different times which they think stopped the hematuria. But the medicine did not stop the bleeding. It is time that we as physicians of Georgia should regard hematuria as a grave symptom and give our patients the benefit of a complete urologic investigation.

THE PROBLEM OF CANCER OF THE PANCREAS

HOWARD M. CLUTE, Boston (*Journal A. M. A.*, July 11, 1936), presents a review from the literature and from personal experience of the symptomatology, and especially the early symptomatology, of cancer of the pancreas, and discusses the problems that are involved in the surgical attack on this lesion. He hopes that, by directing the attention of the present group of surgeons to the problem of cancer of the pancreas, further progress in the management of this disease will be made. Surprisingly few reports are to be found in the literature of successful removal of malignant tumors of the body or tail of the pancreas in the hundred years since Moniere first described cancer of the pancreas. Recent interest in the surgical treatment of pancreatic tumors has been so stimulated by the results obtained by resection of the pancreas or of islet tumors for hyperinsulinism that an increase in the number of pancreatic cancers attacked surgically may be anticipated. Wider study of the early symptoms of pancreatic cancer will give increasing opportunity for the application of surgical and radiologic measures to the pancreas. The pancreas is no longer in the realm of the surgically "untouchables" and can readily be approached by surgeons well trained in the management of serious abdominal diseases.

THE USE OF ATABRINE AND PLASMOCHIN IN THE CONTROL AND TREATMENT OF MALARIA*

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Brunswick

Until a few years ago malaria was universally believed to be transmitted through the air. Varo, however, nearly 2,000 years ago, suggested that this and a similar disease were in some way associated with the mosquito. Nott, as early as 1848, was firmly convinced that malaria was carried by the mosquito, and King in 1882 had collected sufficient evidence to convince a considerable number that such was the case. Laveran in 1880 first discovered a parasite in the blood of malarial patients. In 1884 Manson definitely determined that malaria was transmitted only by the mosquito. In 1897 Ross discovered the estivo-autumnal form of the parasite in the stomach wall of the mosquito, and in July 1898, he found numerous parasites in the salivary gland of the anopheles. In 1900 Manson, in association with Warren, demonstrated the transmission of malaria to man.

No effective treatment was known for the disease until 1632 when first reference was made to the use of cinchona and in 1658 it became popular through its introduction into England. The alkaloids of cinchona were isolated in 1820, and quinine, one of the alkaloids, was introduced and accepted for the treatment of malaria.

To what extent the incidence of malaria was reduced by the introduction of quinine may only be conjectured. It must have been effective, and certainly brought much relief to those who were suffering from the disease.

So much has been written on the treatment and prevention of malaria that its importance is self-evident although the methods are still highly controversial.

This paper, preliminary in nature, deals with our experiences in the drug control of malaria in Glynn County, Georgia. For the past two years accurate records have been kept on all cases of malaria occurring in Glynn County. Similar records are available in the

State Department of Health for a much longer period.

Although deaths and death rates in Georgia from malaria are only fair evidence from which to draw conclusions regarding the incidence and distribution of the disease, they are the principal facts offered. The malaria deaths and death rates for recent years in this State have been as follows:

TABLE 1

DEATHS AND DEATH RATE FROM MALARIA GEORGIA - GLYNN COUNTY				
Year	State of Georgia		Glynn County	
	Number Deaths	Rate Per 100,000 Population	Number Deaths	Rate Per 100,000 Population
1930	442	15.2	4	20.5
1931	307	10.5	0	0
1932	316	10.7	6	30.4
1933	364	12.2	8	40.2
1934	418	13.9	0	0
1935	383	12.6	1	4.5

It will be noted that there was an increase in the death rate in the State, from 1931 until 1935, when there was a decrease of only 1.3 per 100,000 population.

There was a marked increase in the death rate in Glynn County from 1931 until 1934, when the death rate was reduced to zero.

From 1921 to 1931 most of the counties adjacent to the Atlantic Ocean in Georgia and Florida, in the coastal plains regions, showed a lower incidence of malaria. During 1931, in this same area, both morbidity and mortality rates of malaria showed a marked increase. During 1930 to 1933, in Glynn County, a large amount of quinine was furnished the population free of cost, also an active drainage and oiling program established, possibly the most outstanding drainage, oiling and quinine control program in the State of Georgia. Few counties of similar size and population in the entire South have continued for more than four years such a well rounded malaria control program as was approved by the United States Public Health Service.

The population of Glynn County, totaling approximately 20,000 persons, is distributed as follows: Brunswick area 15,000;

*Read before the Medical Association of Georgia Savannah, April 23, 1936.

†Glynn County Commissioner of Health.

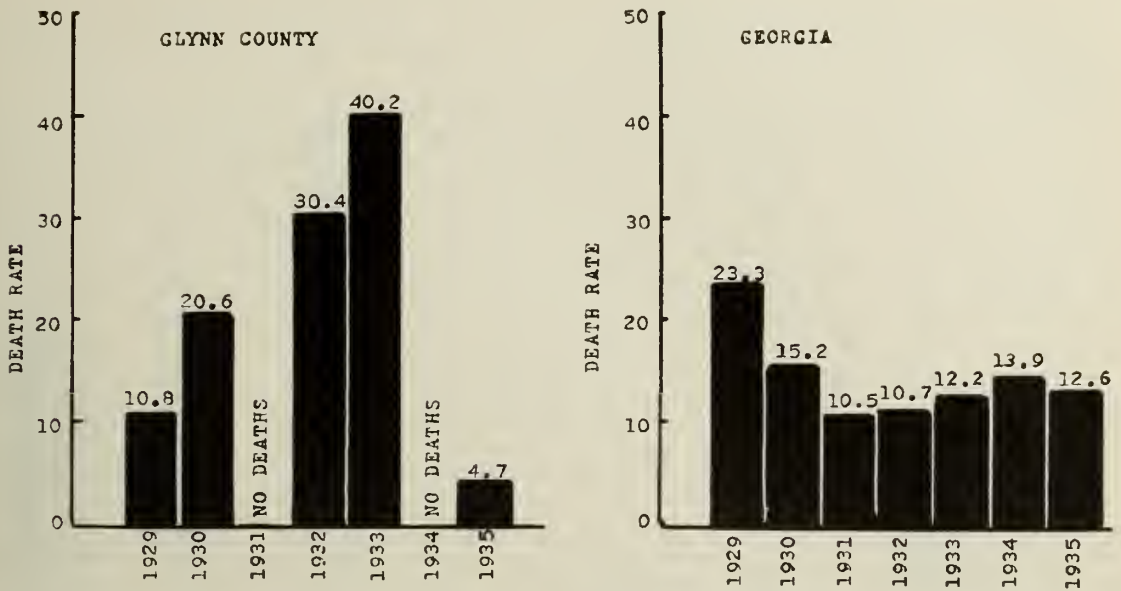


Fig. 1. Death rate from malaria per 100,000 population.

coastal population in non-malarious areas, 1,000; rural mainland, 4,000.

Our malaria drainage program designed to protect concentrated population in the Brunswick area, while incomplete at the close of 1933, was satisfactorily meeting expectations, although there were indications of the need for some other form of low cost temporary malaria control measures pending the completion of the drainage program.

Machine drainage was impracticable and uneconomic in the sparsely populated rural mainland area, and minor hand labor inadequate, so the quinization phase of this program was adopted for the control of rural malaria.

Although 3,650,000 grains of quinine were distributed in the years 1930 to 1934 by the County Board of Health, malaria morbidity and mortality rates in rural Glynn County showed marked increases as compared with previous years, in spite of a decline in the State mortality rate.

On assuming the position of Commissioner of Health of Glynn County in January, 1934, I began to look for some malaria control program that would be more effective.

In the city of Brunswick and our island resorts practically no malaria existed. Both areas are drained of all fresh water controlling the breeding of anopheles mosquitoes, and an active oiling and drainage mainte-

nance program was established in these areas to protect the health of residents and visitors, thus eradicating the anopheles as well as the pestiferous mosquitoes. I further realized that with the exception of Brunswick and our island resorts, malaria was our chief health problem.

Measures were first taken to continue to completion a system of minor hand labor drainage for the protection of suburban Brunswick. This, however, still left uncared for our rural mainland area, in which occurred by far the major portion of our malaria morbidity and mortality.

On Feb. 1, 1934, with funds from the Federal Emergency Relief Administration and Works Progress Administration, we were enabled to begin our malaria health survey of 814 rural families, 38 per cent of whom gave a history of one or more members having had chills and fever in 1933.

In this survey, 1,000 thick blood smears were made and examined for malaria, representing 20 per cent of the total rural population. Seven per cent of the smears were found positive and of these 2 per cent were of the estivo-autumnal form.

In the spring of 1934 a spleen examination was made of 2,000 school children of whom 1,236 were white and 764 negro. Twenty-six per cent of the white and 31 per cent of the negro children had enlarged spleens.

GLYNN COUNTY

CONTROL COUNTY

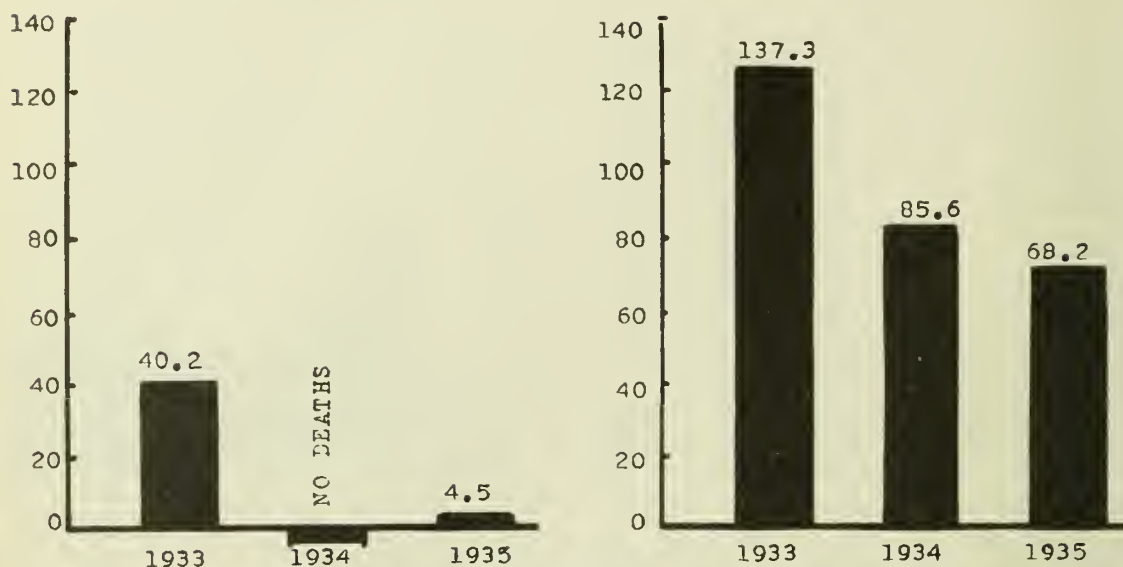


Fig. 2. Death rate from malaria per 100,000 population. Glynn County and Control County.

During the past twenty years numerous attempts have been made to control malaria through sterilization of the carrier with quinine. In spite of the fact that such sterilization has been demonstrated to be most important in the control of this disease, I do not know of a single successful quinine control program. Naturally, quinine having little or no effect on the sexual form of the plasmodium, efforts to control the disease through sterilization of the mosquito are impractical. Bass' work in Mississippi is notable. Griffith in 1925 made a study of an eight-week quinine treatment in a rural county of Alabama. Thirty-six and five-tenths per cent of this series had positive blood smears for malaria and after the supervised treatment, 25.4 per cent remained positive—a reduction of only 11.1 per cent.

Duncan states that in his first series of 168 benign tertian cases treated with atabrine alone, there were only slightly over 10 per cent of relapses. This he considered a big step in advance over quinine, which was found to have a relapse rate up to 50 per cent even after a prolonged course. It is noteworthy that in his series the relapses after atabrine occurred in persons who had been previously treated from one to four times with quinine. No relapse occurred in the cases of fresh infection treated originally with a course of atabrine.

Many objectionable features are connected with the use of quinine for the treatment of malaria, the large doses over a period of eight weeks frequently result in tinnitus and other by-effects. The frequency of idiosyncrasies to quinine cannot be minimized.

All investigators who have attempted various methods of malaria control with quinine point out that it will control the clinical symptoms but it is not popular among most patients, neither will they take the standard treatment until cured.

Atabrine and plasmochin have attracted much attention during recent years. Atabrine is the dihydrochloride of 2-methoxy-6 chlor-9-Alpha-diethyl-amino-beta-pentylamino-acridine. It is a yellowish, bitter powder, soluble in water to the extent of 7 per cent. This drug exerts a destructive effect upon the schizonts of all forms of malaria. It destroys the gametocytes of tertian and quartan malaria, but is less effective against the gametes of tropical (subtertian) malaria. Hence, in this type of malaria, atabrine is generally combined with plasmochin. The duration of treatment is much shorter than with quinine. The optimal total amount of atabrine for adults is 1.5 gram, in daily doses of 0.3 gram ($4\frac{1}{2}$ grains) on five consecutive days, or in daily doses of 0.2 gram (3 grains) on eight consecutive days.

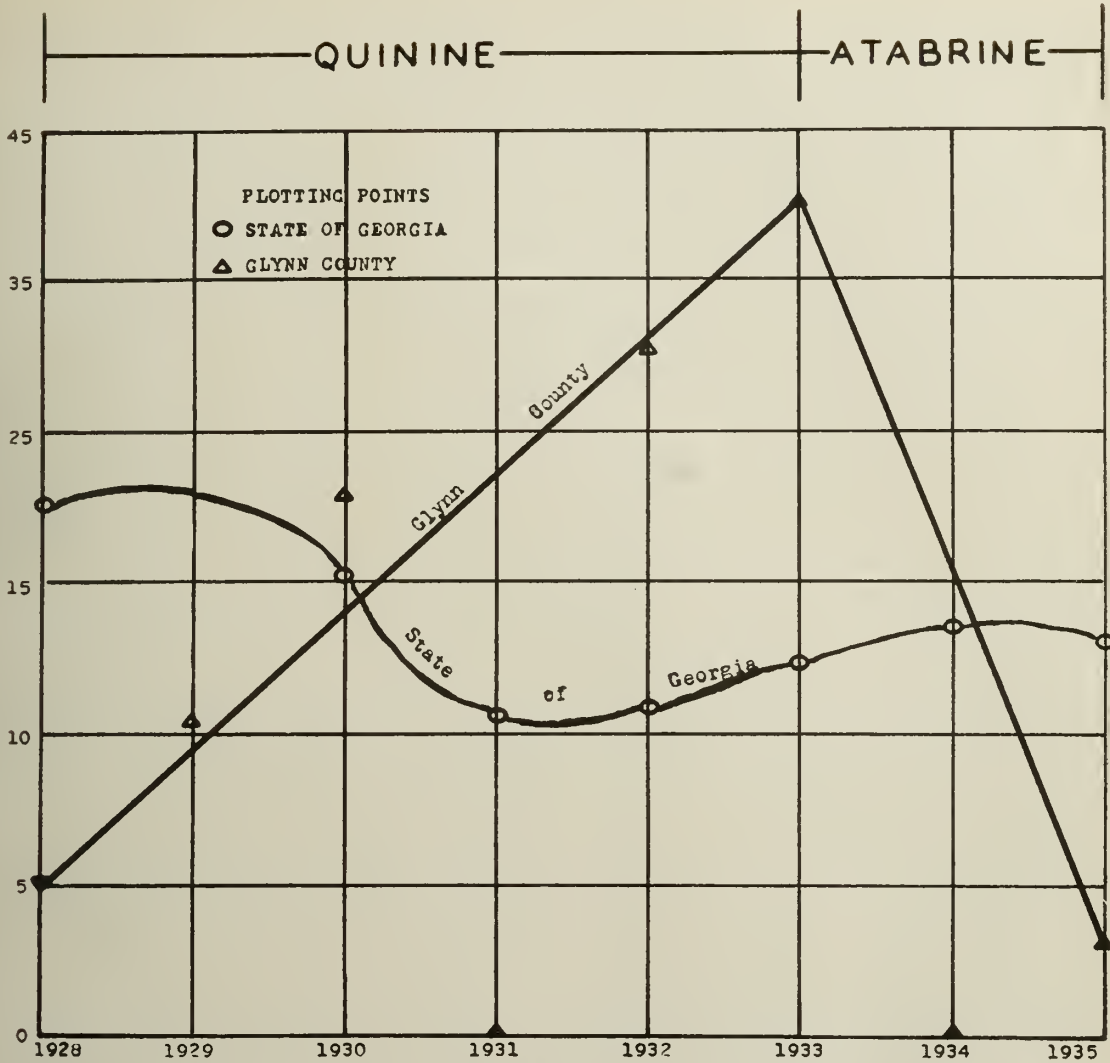


Fig. 3. Comparative curve showing Glynn County malaria death rate trend during quinine and atabrine periods.

The generally good tolerance of atabrine is shown by the fact that it has been used in cases of blackwater fever without recurrence of hemoglobinuria so common after the use of quinine. It has also been found to be well borne in cases of quinine idiosyncrasy.

References are made in the literature to by-effects of atabrine consisting primarily of a discoloration of the skin and an occasional report of mental disturbances. In our experience discoloration of the skin has been noted in rare instances. It is merely a deposition of the drug in the skin, disappearing in a relatively short time. Mental disturbances or other by-effects have not been seen by us.

Plasmochin exerts only a slight effect on the schizonts but has a specific action on the gametocytes. Its former use in tertian and quartan malaria has been largely replaced by

atabrine. It is, however, advocated that in estivo-autumnal fever the customary course of atabrine be followed by three days' administration of plasmochin 0.01 gram three times daily.

On April 23, 1934, the Glynn County Board of Health received its first shipment of these antimalarial preparations. There were established at once in four sections of Glynn County, community health centers where atabrine could be secured upon request. The only requirement for receiving the drug was a history of having had fever and chills. When an adult requested atabrine, he was closely questioned by the nurse in charge of the clinic as to the number in his family, and if any others had been sick. He was then told the value of treating every member of the family so that those who might harbor the

malaria parasite could be cured before the disease caused other members to become sick. As a result of this educational talk on malaria control we were able to treat with atabrine not only the member sick with the disease but the entire family. The persons requesting atabrine at our health center were required to permit us to obtain a thick blood smear which was examined the following day. If the smear showed crescents (gametocytes) he was visited by a nurse in his home and given plasmochin until the blood was found negative at which time blood smears were also obtained from other members of the family.

The health centers established in 1934 in four sections of the county have been operated continuously each week. One afternoon is devoted to malaria control. As a result of the malaria survey early in 1934, we were able to check each family in the community, and those that gave a history of malaria and had not been to the clinic were visited by a nurse. Blood smears were made and individuals were requested to go to their physician for a check if they had not already received atabrine. Blood smears were of little value in diagnosis of malaria as 90 per cent of our patients gave a history of having taken quinine in some form during the past several weeks. Every known positive case of malaria was seen and treatment always given to the entire family, that is, one tablet of 0.1 gram three times daily for five days. I am sure that the treatment of the entire family was most important in our control.

In the fall of 1934, 2,300 thick blood smears were made and examined from the same section of Glynn County as the original malaria survey. In addition, this survey included 1,200 persons on the relief roll. These blood examinations showed only eight-tenths of one per cent positive for malaria.

TABLE 2

GLYNN COUNTY
THICK BLOOD EXAMINATIONS FOR MALARIA
MADE AT STATE LABORATORY

1934—SPRING		1934—FALL		1936—SPRING	
Smears Made	Per Cent Positive	Smears Made	Per Cent Positive	Smears Made	Per Cent Positive
1000	7.	2300	0.8	1699	0.3

Attention is called to the full significance of these results. The spring index, collected

prior to the onset of the malaria season and subsequent to 6 non-infective months in which treatment and the forces of recuperation have cleared up the previous years cases of malaria, is representative only of residual carrier infection. In uncontrolled areas, it is generally accepted that positive cases in the fall index should range from 5 to 10 times spring index figures. Our spring index of 7 per cent positive cases would, therefore, indicate a fall index positive expectancy of 35 to 70 per cent, as compared with actual findings of eight-tenths of one per cent.

Attention is also called to the broad population base from which these results have been obtained. It is apparent that statistical results obtained from a base of 1,000 to 2,300 persons prevents the introduction of errors applicable to studies covering small population groups.

At the same time 2,060 school children were examined and a spleen index made. This examination showed only 7 per cent enlarged spleen, as compared to 28.5 in the preceding spring.

As a result of our atabrine program the mortality rate in Glynn County in 1934 was reduced to zero and the morbidity rate reduced at least 80 per cent over 1933 and 1932, where the State rate showed a marked increase in 1934 (see Fig. 3).

Our blood index was reduced from 7 per cent to 0.8 of one per cent. A small county adjacent to Glynn was taken as a control. In this county, soil, rainfall and population are in most respects similar to Glynn County. During 1934 no attempt was made to control malaria in the control area except the Federal Emergency Relief Administration drainage program. Atabrine was not generally used except for an occasional prescription by a local physician.

In December, 1934 and January, 1935, blood smears in the control county showed 4.8 per cent positive for malaria. Twenty per cent of the population gave a history of having had malaria during 1934. *The death rate in the control county rose to 85.6 per 100,000 population as compared to zero in Glynn County.*

Thirty-six thousand five hundred atabrine tablets were dispensed to the population in the treatment area in 1934.

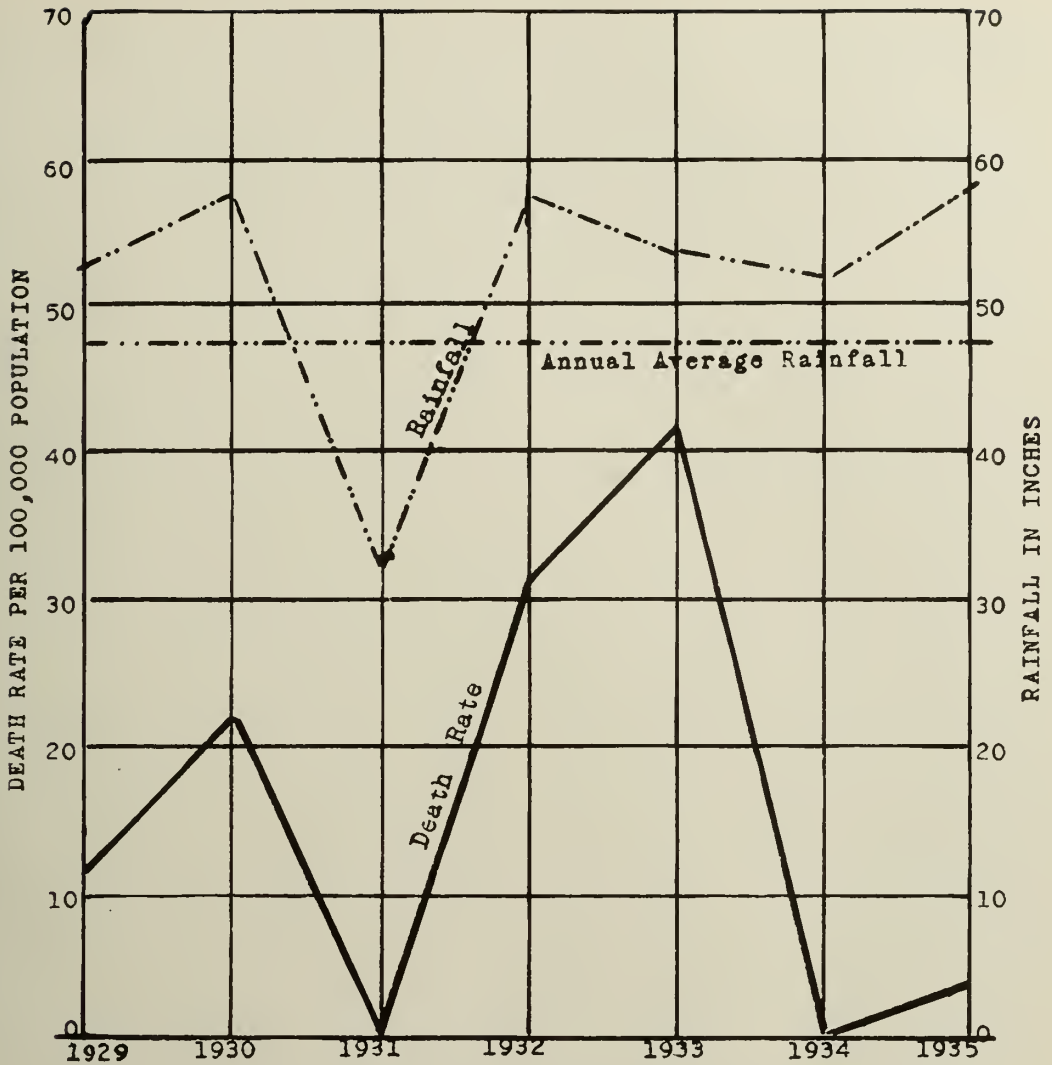


Fig. 4. Glynn County malaria death rate per 100,000 population. Annual rainfall in inches.

The treatment was carried over into 1935 but we received fewer requests and administered only one-half the amount of atabrine.

In 1934, 2,555 persons were treated with atabrine. In 1935, 1,108 requested treatment and of these 378 had received the drug in 1934. Of this number only fifty showed positive bloods on the second examination and were given a second course of treatment.

I do not know whether the recurrence was a reinfection of malaria, or whether it was a relapse of the original infection; however, blood examinations lead me to believe they were reinfections.

SUMMARY

Upon assuming the position of Health Commissioner of Glynn County it became apparent that the major health problem in this locality was that of malaria control. A

very intensive quinization program had been instituted and carried out for a number of years prior to my assuming office, and in spite of which there was an alarming increase in the incidence of the disease. In 1932 and 1933, 3,650,000 grains of quinine were administered, and in the fall of 1933 both the incidence and the death rate in Glynn County had increased to a point exceeding that of 1931 and 1932. This program being ineffective, it was decided to employ atabrine and plasmochin in an effort to control malaria. Four health centers were established in the spring of 1934 for the treatment of all persons showing positive blood smears, as well as those giving histories of malaria. All members of families where one or more had positive smears were given a course of atabrine and plasmochin. As a result of the use of

these drugs, the death rate was reduced from 40.2 per 100,000 population to zero and the incidence as determined by blood smears from 7 per cent to eight-tenths of one per cent. A control area adjoining the treatment area with similar soil, rainfall and population showed a death rate from malaria in the same year of 85.6 per 100,000. Likewise, the incidence and death rate in the State at large showed a decided increase in 1934.

It is generally conceded that drainage as the sole means of malaria control is neither practicable nor economic in many high morbidity rural areas in this State. These conditions are frequently encountered in sparsely populated areas, areas in which malaria and other factors have in a major way frustrated the development of local economic and financial resources, and areas presenting technical drainage problems of excessive cost. This statement does not reflect on the applicability or suitability of drainage for malaria control where these problems are not encountered.

It is similarly conceded that temporary low cost malaria control measures are indicated in many other areas pending the completion of an area-wide drainage program over a period of years.

Until recently we have had to depend in such instances on the use of quinine or screening, both of which have yielded inadequate and ineffective results.

Our preliminary investigation leads us to believe that the use of the new synthetics, atabrine and plasmochin, has tentatively proven their position as an effective, low cost method of controlling malaria. Our results indicate the suitability of their acceptance, with drainage, as the two complementary principal methods of controlling malaria in the State of Georgia.

It is planned to continue this work and publish a further report at a later date.

Discussion on Paper of Dr. M. E. Winchester

DR. H. M. TOLLESON (Eastman): I am sure that we have all been impressed with the profound potentialities implied by the summary of Dr. Winchester's work. We always see in Dr. Winchester's work thoroughness, and it certainly has been demonstrated here.

In my own experience the use of atabrine has been confined to private practice and certainly not on a wide scale as has been the privilege of Dr. Winchester in his public health work in Glynn County. Personally I agree with him that atabrine shows certain considerable improvement over the treatment of malaria with

quinine as was previously followed. Our patients will not take the standard treatment of quinine. However, I disagree in this respect. I have found that the faults which we have to find with atabrine in my private practice are considerably greater than is intimated in his results. The yellow discoloration which he says is rare in his experience is almost 100 per cent in mine. Patients object considerably to this yellow discoloration, particularly the ladies. Lots of people do not like to have their skin yellowed as though by jaundice, although we assure them it is just a dye deposited in the skin. They do not like the yellow color.

Frankly, I do not feel that we have a perfect treatment for malaria. I think the goal is yet to be reached. I cannot resist making the statement at this time that I have recently discovered what I consider a new specific for the treatment of malaria. This is a drug which contains no iron, arsenic, quinine, atabrine, or anything else previously used in the treatment of malaria. It is given intravenously. I have always said the most effective treatment would have to be through the blood stream, because the parasites are in the blood stream. As a rule, after three to five injections of 5 cc. of a one per cent solution of this drug, the parasites will disappear and the clinical picture will clear.

This announcement is a little premature, and I hope that a year from now I can present to you possibly a hundred cases successfully treated with this new specific, which I claim with six or more injections of 2.5 to 5 cc. will cure any type of malaria from the tertian to the estivo-antumnal type, and recurrences do not occur at all when adequately treated.

DR. J. W. MOBLEY, JR. (Pelham): This assembly should be grateful for this accurate paper presented by Dr. Winchester. His historical review is interesting.

Table 1, showing the death rate in the State of Georgia and Glynn County, is particularly interesting in that 1931, a year nearly 20 inches below normal rainfall, shows the lowest death rate in the State at large and no death rate in Glynn County. To my mind this definitely proves that basically the most thorough malaria control is decreasing the breeding places and the treatment of same. In comparing the years 1934 and 1935, with far above average rainfall, the Glynn County death rate was practically nil for the two years, proving probably two things: One, the results obtained from drainage and oiling programs carried out in Glynn County, and two, that the use of atabrine and plasmochin is an efficient malaria control.

It is probable and possible that the decrease of 1.3 per cent in the State at large in 1935 may be attributed to the use of atabrine and plasmochin. Surely the death rate in Glynn County in 1934 and 1935 is due to the use of atabrine and plasmochin in addition to drainage. It is also interesting to note that from 1930 through 1933 active drainage and oiling were being carried out in Glynn County, but not as completely as in 1934 and 1935. Also during this period of years 3,650,000 grains of quinine were distributed, but with the striking increase in death rate, as high as 40 per cent in 1933.

In 1934 splenic examinations were made in 2,000 school children, 1,236 white and 764 negroes, showing 26 per cent in white and 31 per cent in negroes

enlarged. There is no doubt that splenic enlargement is of some value, but it is doubtful if any positive information can be gained from splenic examinations.

Like Dr. Winchester and others, I am thoroughly convinced that sterilization of carriers cannot be effected by the use of quinine. Neither can one hundred per cent sterilization be obtained by the use of atabrine and plasmochin. However, this line of therapy is a great advance toward malaria control. Pardoning the use of a loose term, occasionally we find a malaria-fast blood regardless of treatment.

As to comparative treatment between quinine and atabrine, the latter is far more rapid, effective, and as a rule more agreeable to the patient, and the total cost to the patient is less. As a whole it is well tolerated by infants, children and adults. In the only case of black-water fever in which atabrine was used, there was no increase in toxicity and the hemoglobinuria cleared within seventy-two hours. This is decidedly not true in quinine therapy. In our experience we have not had as pleasing results so far as toxicity is concerned as found by Dr. Winchester. In the first year of its use it was not uncommon to produce skin discolorations varying from mild to severe. However, these were transitory. We have seen only two cases of mental disturbances, one being mild and the other severe, requiring psychiatric treatment. Our most common complications were subdiaphragmatic pain, closely simulating the symptoms of epidemic pleurodynia, devil's grippe; circulatory and respiratory depression; and symptoms of mild arsenical poisoning, gastro-intestinal, and so forth. The above mentioned unfavorable symptoms as a rule can easily be avoided by routine urinary examinations, preferably acid urine or instructing the patient to notify the physician if the urine becomes a deep yellow. I routinely combine these two drugs with saccharated ferrous carbonate. Since following this routine we have reduced our ill effects of this drug to a minimum.

Whether or not this difference in toxicity as found by Dr. Winchester and our clinic is due to the fact that as practicing physicians we are more closely in contact with our patients or whether it is due to the much larger percentage of estivo-autumnal malaria found in our district, I do not know. In his series of cases he only showed about twenty-nine per cent estivo-autumnal. In a series of 1,600 smears we show 67.5 per cent positive estivo-autumnal.

Neither have we had quite as pleasing results in our spring index (carry-overs). It is certainly true there has been a great reduction in these carry-overs, but we have any number of cases who, following one or more courses of atabrine and plasmochin the previous year, show large spleens and positive smears in the spring of the following year or develop malaria later on in the season. I am sure that some of these are reinfections, but what percentage I am unable to say.

Summary: In the absence of suitable drainage or in conjunction with drainage, atabrine and plasmochin to date seem to be the logical means of malaria control and treatment.

DR. H. C. ATKINSON (Macon): Mercury has been used in the treatment of syphilis for more than 400 years. We are still using it, but are not depending on it primarily or alone. We are supposed to be talking

about malaria, but I wanted to try to draw a parallelism in the therapy of these two diseases, which I believe will hold pretty well.

The recent work of Krause and others in studying artificially-induced malaria for the treatment of paresis and similar conditions has given an opportunity for a study of malaria which we did not have before. They have shown, I think conclusively, that quinine works in malaria in very much the same way as mercury works in syphilis, and that is in encouraging and stimulating the resistance of the tissues against the infection. Outside the body quinine does not kill the plasmodium of malaria, any more than mercury outside the body will kill the spirochete of syphilis.

As Dr. Tolleson suggested, I do not think we have an ideal treatment for malaria, nor have we for syphilis, but it would seem to me that we might think of quinine in handling our malaria just as we do mercury in handling our syphilis. We might think of our newer agents, plasmochin and atabrine, as we do of our arsenicals in the treatment of syphilis. They are more dangerous, we have more complications from them, but they are certainly more effective in killing the parasites of the disease.

DR. M. E. WINCHESTER (Brunswick): I appreciate the discussions but feel that so far as the average rural county in Georgia is concerned the problem of malaria control by drainage alone is not practicable or economical. There is no indication that quinine prophylaxis has been successful.

My observation of the use of atabrine in the treatment of malaria shows the superiority of atabrine, in respect of tolerance, shortness of the period of treatment, and intensity of prophylactic effect, and I feel that in mass treatment of malaria atabrine has proven the most effective drug.

THE PHARMACOPEIA AND THE PHYSICIAN: THE USE OF CATHARTICS

OSCAR W. BETHEA, New Orleans (*Journal A. M. A.*, Oct. 17, 1936), states that the persistent tendency by the public to the use of purgatives is largely the result of the influence of commercial advertising. Some of the possible disadvantages are well illustrated in the recent statistics from the Charity Hospital at New Orleans covering acute appendicitis. It was shown that, of those patients receiving no purgative before operation, one in every ninety-six died; of those who had taken a purgative before operation, one in every eleven died; of those who had been the victim of repeated purgation, one in every four died. Cathartics should not be used without definite indications. In the selection of a purgative agent, due attention should be given to the indications and contraindications presented by the particular patient. The United States Pharmacopeia XI contains a variety of properly standardized cathartic drugs that will meet the therapeutic requirements in most if not all instances.

The American Medical Association will hold its eighty-eighth annual session in Atlantic City, New Jersey, June 7-11, 1937.

PSYCHOSIS FOLLOWING THE ADMINISTRATION OF ATABRINE FOR MALARIA*

E. W. ALLEN, M.D.
H. D. ALLEN, JR., M.D.
CHAS. B. FULGHUM, M.D.
Milledgeville

Published reports by Cordes, Newman, Mitchell and Galtman, Johnson, May, Morrow, Orenstene and Wynne covering 1,307 case reports of malaria treated with atabrine and atabrine and plasmochin, made no mention of the toxic effects from atabrine other than transient pigmentation of the skin, occasional headaches, nausea and vomiting. The nausea and vomiting appeared to be more closely related to plasmochin when used alone or in combination with atabrine.

In a series of 750 patients treated with atabrine, Greene encountered two instances of cerebral excitation. The first patient gave a history of feeling light-headed after he had taken three tablets daily for seven days. He danced, sang and was generally excited, but after a dose of bromide he slept well and recovered by the next day, manifesting no symptoms for the following month. The second patient received three tablets daily for seven days. On the sixth day of treatment he became excited, danced, sang and was hilarious. His mental condition was slightly improved the following day and cleared in 48 hours, but he felt a prickly sensation in his legs for three days.

According to Kingsbury, O. F. Connolly of the Federated Malay States was the first observer to note psychosis following the use of atabrine. He reported six cases and referred to eleven cases previously observed and reported upon in unpublished papers by his colleagues. It was Connolly's opinion that atabrine caused cerebral symptoms but that actual atabrine toxicosis was infrequent.

Greene believes that atabrine is absorbed from the intestine into the liver and excreted in the bile and reabsorbed, appearing in the urine in three to five days. It can be detected in the feces and urine by acidifying the specimens with glacial acetic acid and heating; a

yellow fluorescence indicates the presence of atabrine.

Studies of Atabrine Excretion

R. B. Logue and H. P. Hampton, of Emory University, resident interns of our institution, made the following studies:

The regularly prescribed course of atabrine consisting of $1\frac{1}{2}$ grain doses three times daily for 5 days was taken by two normal male subjects who showed no signs of malaria and who gave no previous history of the disease. The urine was tested for atabrine using with the amyl alcohol test. In both patients, the urine was found to contain atabrine within 4 hours after the first dose. A third subject was given a single $1\frac{1}{2}$ grain dose by mouth and the urine was found to contain atabrine at the end of 1 hour.

Subject A, white male, aged 24, weight 137, height 5 feet $6\frac{1}{2}$ inches, was found to excrete atabrine in the urine for a period of 35 days. Morning specimens of urine were used in making all tests except one; this specimen was obtained about 10 o'clock in the morning and was negative for atabrine. Subsequent tests upon morning specimens were positive, the inference being that a sufficient concentration had not accumulated in the case of the isolated sample.

Subject B, white male, aged 23, weight 165, height 6 feet $1\frac{1}{2}$ inches, was found to excrete atabrine in the urine for a period of 50 days. The contaminating presence of urobilin in several tests was removed by boiling after the addition of sulphuric acid.

Subjective symptoms of exhilaration were experienced in both cases on the fifth day. Subject A noted insomnia. Subject B, for a period of 3 or 4 hours after taking the last dose of atabrine, showed a flight of ideas, easy distractibility and a constant stream of irrelevant talking. The factor of suggestibility could not be ruled out in either case.

Methods for the Detection and Estimation of Atabrine in the Urine†

I. Technic of Qualitative Test

(1) About 100 cc. of urine containing atabrine are rendered alkaline with 10 Gm. of potassium carbonate, and shaken with 20 cc. of amyl alcohol in a glass cylinder. (2) The alcohol layer is poured from the top and, if turbid, is washed with a saturated aqueous solution of potassium carbonate. (3) The presence of atabrine would be evident from the typical yellow color imparted to amyl alcohol, and can be confirmed in the following way: With a convex lens the bright sunlight is focused against a black background and the tube containing the extracted amyl alcohol interposed in a slanting position between the lens and its focus. A distinct green fluorescence is noticeable in the beam of light, especially on moving the lens parallel to the tube. It should be distinguished from the faint blue fluorescence sometimes caused by the solution of urobilin in amyl alcohol.

The green fluorescence, mentioned above, is distinctly shown in an amyl alcohol extract containing atabrine in dilutions up to 1 in 2,000,000. This last would correspond to the presence of atabrine in a dilution up to 1 in 10,000,000 in the urine tested.

*Read before the Medical Association of Georgia, Savannah, April 23, 1936.

†(Personal correspondence with Dr. W. T. Dawson, University of Texas School of Medicine, Galveston, Texas.)

TABLE I

	Sex and Age	Days of Symptoms Before Admission	Days of Symptoms in This Institution	Total Days of Mental Symptoms	Time Elapsed Between Drug and Symptoms	Dose Atabrine	Weight
11/4-33 541-F	Female-20	14 days	4 days	18 days	Not known exactly, but only a few days after completion of course.	1 tablet t.i.d. for 5 days. Total 1.5 Gm.	?—Not under 125
10-1-34 637-M	Male-17	10 days	3 days	13 days	6 days	Same Total 1.5 Gm.	137 or 62.2 Kg.
11/19/34 617-F	Female-48	Irritable from first of treatment. 1 day.	7 days	8 days	11 days after second course	2 courses of same, 3 weeks apart. Total 1.5 Gm.	151 or 68.7 Kg.
12/1/34	Male-21	7 days	7 days	14 days	18 days	Same Total 1.5 Gm.	167 or 75.9 Kg.
8/3/35 713-M	Male-34	2 days	10 days	12 days	2 days after completing course.	1 tablet t.i.d. for 5 days. Total 1.5 Gm.	107 or 48.6 Kg.
6/23/35 682-F	Female-48	4 days	5 days	9 days	Excited after first few tablets, maniacal after 13th tablet.	1 tablet t.i.d. until 13 were taken. 1.3.	159 or 72.2 Kg.
7/22/35 693-F	Female-31	7 days	30 days Transferred. Psychotic.	37 when transferred	Symptoms followed immediately on treatment.	1 tablet t.i.d. for 5 days. Total 1.5 Gm.	72 or 32.8 Kg.
9/26/35 763-F	Female-40	4 days	5 days	9 days	Became excited and delusional with 13th tablet.	1 tablet t.i.d. until 13th tablet taken. Total 1.3 Gm.	115 or 52.2 Kg.
10/27/35 736-M	Male-63	4 days	13 days	17 days	About 14 days	1 tablet t.i.d. for 5 days. Total 1.5 Gm.	119 or 54. Kg.

II. Technic of Quantitative Test

(1) Take 100 cc. of urine in a separating funnel, and add 10 Gm. of potassium carbonate. Shake to dissolve the latter. (2) When this has occurred, add 20 cc. of amyl alcohol, shake vigorously for 3 minutes, and then allow the mixture to separate into two layers. (3) The lower urine layer is run out carefully, and the upper amyl alcohol layer is washed with 10 cc. of a saturated aqueous solution of potassium carbonate. (4) As a good deal of flocculent matter is present in the washed amyl alcohol, it is centrifugalized. (5) Then 10 cc. of the clear supernatant layer are poured in a test tube, and 2 cc. of glacial acetic acid added. (6) This mixture is shaken and compared colorimetrically with a standard atabrine solution.

We have found that if one drop of pure sulphuric acid be added to every cc. of the amyl alcohol extract, and the mixture be heated in a boiling-water bath for 3 minutes, the blue fluorescence due to urobilin is eliminated. The specimen should, however, be examined while still hot, as some turbidity appears on cooling.

The addition of quinine salts, salicylates, caffeine, plasmoquine or iron salts to the urine has not been found to interfere with the green fluorescence character-

istic of the amyl alcohol extract containing atabrine.

We have observed nine patients who presented evidence of toxic psychosis with atabrine as the principal factor. Some of these are reported in detail, others briefly and all are included in the charts.

Case Reports

Case I. In November, 1933, a well nourished young woman, aged 20, was admitted to the care of one of us (H. D. A., Jr.) for hospital treatment of an acute mental upset. The history, as related by her father, was that she had been away from home attending school. She complained of feeling bad and, upon the recommendation of her sister, she took fifteen 1½ grain atabrine tablets during a five day interval. Eleven days previous to admission, she suddenly began talking excitedly about the Scripture. The school physician was called to see her and he recommended that she be sent home on account of malaria, anemia and delirium. The physician also suggested that she not take any more atabrine. There were other periods in which she was restless and wanted to dance about the room. A week in a general hospital showed little change in her symptoms.

On admission she walked indifferently into the hospital, went to bed, was mute and seemed rather morose. For four days she remained in bed during the day, but at night would talk in a rambling manner, would get out of bed and roll on the floor and was indifferent to the appearance of her night gown, bed clothing and exposure of her body. She made a sudden and rapid improvement, entirely out of keeping with the strong suggestion of an acute manic-depressive psychosis. Her mutism made tests of her orientation of no value. A persistent temperature between 99 and 100 degrees F., the nocturnal restlessness, a history of probable malaria and a yellowish pigment of the skin, suggested a toxic psychosis.

Case 2. In October, 1934, a young man, aged 17, weight 137 pounds, was admitted to the care of one of us (E. W. A.). Ten days previous to admission he began having peculiar notions and talked incessantly about a horse. He wanted to leave home to make money to buy a horse. He went into a store, grabbed a girl and said she was his wife. He would talk as if he were in school. He was very restless and could not sleep at night without being "doped."

The volubility with wild excitement continued for the first three days in the hospital. On the third night, after eight hours natural sleep, he awoke clear of his confusion and stated that three weeks previously he had malaria and had taken three atabrine tablets a day for five days.

Case 3. In November, 1934, a married woman, aged 48, was brought to us by Dr. L. F. Lanier, of Sylvania. Thirty-two days previous to admission he had first observed her with a fever of 103 degrees F. He diagnosed her as having malarial fever in view of the sudden onset and a leukocyte and differential blood count that appeared normal. Plasmodia were not found in either his examination or that submitted to the State Board of Health laboratories. He prescribed atabrine and quinine in the usual dosage, and within the five day period this patient was free from fever but was unable to return to work. Twenty-one days later she again began having fever and her blood was sent to the State Board of Health for various agglutin tests, all of which were negative. Quinine and atabrine were again prescribed and this was preceded by calomel because the liver and spleen were found to be enlarged. Throughout her illness she seemed unduly stubborn and averse to taking medicine. The night before admission she suddenly began talking about the house being on fire, that she should get up and go to her business, became angry with her daughter and threatened to punish her for being up all night and insisted that she should get her husband off to work; she was forgetful and extremely confused.

On arrival at the hospital she appeared confused and morose, and had to be urged to go to a room. In the hospital room she refused to admit that she had been removed from her home to the hospital and pleaded that she be permitted to go to her business, which she felt was just a few blocks away. She was angry and talked loud when the nurses gave her a bath. She did take nourishment, slept well the first night and began improving rapidly the next day. She continued to be unduly worried and anxious about her

business and felt that it was being allowed to go to ruin. On the sixth day in the hospital she developed acute peridental abscesses and she agreed to stay another week for observation and treatment of her teeth.

Six other cases have been admitted to our care. One of us (C. B. F.) has tabulated the entire group and worked out the statistical summary.

Case No. 736, male, requires special comment, as this patient exhibited increased activity and restlessness following atabrine therapy for malaria. He was given bromide for this condition which accumulated in his blood to a toxic level. He had cerebrospinal syphilis of the taboparetic type, yet he cleared mentally within the time required for the elimination of the exogenous toxins.

Case No. 693, female, was transferred to the Milledgeville State Hospital with considerable improvement from an intercurrent or associated pyelitis and cystitis, but was highly maniacal.

Summary of Tabulation

Sex and Age: Males 4—average age 33.7 years. Females 5—average age 37.4 years. Average of all—35.5 years. Sex and age seemed to bear no relation to severity or duration of symptoms.

Duration of Symptoms Before Admission: Males—average 5.7 days. Females—average 6.0 days. Average of all 5.8 days.

Days of Symptoms in This Institution: Males average—8.2 days. Females average—10.2 days. Average of all 9.2 days.

Total Days of Symptoms: Males average 14 days. Females average 16.2 days. Average of all 15.1 days.

Time Elapsed Between Drug and Symptoms: Males average 10 days. Females average 3 days. Average of all 6.5 days.

The females developed mental symptoms earlier after the ingestion of the drug than did the males. Two of the five females became excited after thirteen tablets were taken. This was true in spite of the fact that the average weights of males and females differ only eight pounds, and that two females did not take a complete course of 1.5 Gm.

PATIENT	TOTAL DOSE ATABRINE	WEIGHT IN KG.	MG. PER KG. WEIGHT	DURATION OF SYMPTOMS
682F	1.3 Gm.	72.2	18	9 Days
647M	1.5 Gm.	75.9	19.8	14 Days
617F	1.5 Gm. 3 weeks, 1.5 Gm. later	68.7	21.3	8 Days
637M	1.5	63.2	24.1	13 Days
703F	1.3	52.2	24.9	9 Days
541F	1.5	56.7	26.5	18 Days
736M	1.5 Gm.	54	27.8	17 Days
713M	1.5 Gm.	48.6	31	12 Days
693F	1.5	32.8	45	37 Days

Dose: There seems to be some relation between the milligrams of atabrine administered to the kilograms of body weight and the duration of mental symptoms.

All four patients who took more than 25 mg. per kilograms of body weight had symptoms over ten

TABLE 2

<i>Total Dosage Mg. per Kilo</i>	<i>Type of Mental Upset</i>	<i>Previous Nervous or Mental Manifestations</i>	<i>Per Cent Packed R. B. C.</i>
Not over 26.5	Restless, confused, excited, partially disoriented. Slept poorly. Mutism, drowsy during day; restless, talking at night.	Probably over-religious	42%
24.1	Slightly confused, wildly excited, poor sleep. Delusional, hallucinating, untidy, voluble. Had to be transferred from general hospital. Resembled manic with mild confusion.	None known	46½ %
21.3	Confusion, amnesia, negative and morose.	Undescribed nervous episode many years ago.	42%
19.8	Excited, sleepless, destructive. Had to be placed in jail. Confused and partially disoriented. Hallucinating. Manic excitement with confusion.	None	42%
31	Violent excitement, combative, noisy, voluble. Manic excitement, slight confusion.	Psychopathic personality. Alcohol. Stole a car.	3 quartan rises of temperature to above 103°. After recovery 32.
18	Violent excitement. Combative, destructive. Refused food and fluid. Required tube feeding.	None	45%
45	Violent excitement, destructive, indifferent to excretion. Refused food, required tube feeding.		31%
24.9	Hyperactive, talkative, religious, angry and untidy. Paranoid against husband.	Says she has always been overactive	41%
27.8	Confusion, typically bromide. Superimposed on his original excitement.	Memory defects and slightly judgment defect before atabrine.	51%

days, although two who had symptoms lasting over ten days took 19.1 and 24.1 mg. per kilogram respectively. The three patients who took less than 25 mg. per kilogram had symptoms less than ten days. Six of the nine patients in this series weighed less than 68 kilograms (150 pounds).

Type of Mental Disorder: Five of these showed wild excitements closely resembling the manic type. Three were males and two females. Two showed mild excitements with confusion; both were females. Two showed almost no excitement, but severe confusion. One was a male and one a female.

Previous Nervous or Mental Manifestations: Only four of the nine patients had had previous nervous or mental symptoms, one having been mildly excited over religion, one an undescribed nervous episode when young, another had a psychopathic personality and one had an undiscovered paresis.

Percentage Packed Red Blood Cells: This examination was included in an attempt to exclude dehydration as a cause of mental symptoms. The findings indicate no blood concentration in any patient. Only two patients showed anemia.

Associated Physical Findings: Six patients had associated physical conditions which could have been predisposing factors.

Quinine: Five of the nine patients had had quinine in addition to atabrine.

Pigmentation: Only one patient failed to develop pigmentation. It is interesting to note that she secured the largest dose of atabrine (45 mg. kilograms) and had the most days of psychotic symptoms. She was the only patient of the series who did not recover

while at this institution.

Upper Abdominal Distress: This symptom has been described in a small percentage of cases. It occurred in one-third of this series and was always the high, transverse, colon type of distress. In one male it was severe and prolonged and less severe in one female and one male.

CONCLUSIONS

These nine case reports are presented as evidence of a toxic psychosis with atabrine as the principal etiologic factor.

Further proof of this relationship must await appropriate chemical studies of the excretion of the drug, such as the glacial acetic acid test of the urine for delayed excretion.

Other factors that may delay excretion should be watched for while the patient is under active treatment, such as constipation, kidney insufficiency, insufficient liquid intake or loss of blood liquids that may result from insufficient nourishment, high fever, excessive exercise and sweating.

Yellow pigmentation is a warning complication. Evidently the yellow pigmentation can be seen only in the skin of the lightest colored races.

The dosage of atabrine should perhaps be more closely correlated to body weight.

TABLE 3

<i>Associated Findings</i>	<i>Quinine</i>	<i>Pigment</i>	<i>Upper Abdominal Distress</i>
Acne.	Yes	Yes	Yes
Patient 78 inches tall at 17 years of age and still growing. One paternal uncle 90 inches tall. Father 78 inches.	No	Yes	
Acute peridental abscess.	Yes	Yes	
None.	Yes	Yes	Yes
Has had lues. Blood and spinal fluid negative now. Has gonorrhea and bubo; malnutrition. Moderate anemia.	Yes	Yes	
Obesity, hypertrichosis and menstrual irregularities.	Yes	Yes	
Partial paralysis left leg. Malnutrition. Moderate anemia. Pyuria, cystitis (fever).	None known	No	
Mild hypothyroidism. Blood Bromide 150.	No	Yes	
Bromide intoxication. Serologic Lues and Paresis with mild memory and judgment defects.	No	Yes	

Each patient with manic depressive symptoms, even though transient, should be followed up over a period of years to learn if recurrent attacks independent of atabrine occur.

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Discussion on Paper by Dr. E. W. Allen, Dr. H. D. Allen, Jr., and Dr. Chas. B. Fulghum

DR. SHELTON P. SANFORD (Savannah): The past two decades of medicine have been characterized by the introduction of numerous synthetic drugs.

After prolonged clinical trial many of these drugs have been found too toxic for general use. Notable examples of such drugs have been: (1) Cincophen, which was discarded because of its toxic effect on the liver, and (2) the Amidopyrine group, which after 15 years of trial was found too intimately associated with agranulocytic angina for indiscriminate use.

It is not enough that a drug should be non-toxic for experimental animals. It must be safe for human beings and even frail human beings. This can only be determined after prolonged clinical use and the keen observation of clinicians of the sometimes rather remote after effects.

This toxic psychosis appears for the most part in patients who have a delayed excretion time or who

have taken an over dose. It would certainly seem prudent to avoid atabrine in cases where elimination is below normal.

The average physician would not see enough such cases in a lifetime to associate the psychosis with the drug. It is only where many cases of a particular type are under the care of observant physicians that such observations can be made.

We are therefore especially indebted to Dr. Allen for bringing this sizeable series to our attention.

DR. GEORGE L. ECHOLS (Milledgeville): I wish to thank Dr. Winchester and Dr. Allen for bringing these two papers to our attention, and also to mention the discussions that have already taken place.

This subject of malaria is a serious problem. I know, because I have had it myself and I have been treated for it, and I have been treated with quinine and treated a little bit on three different occasions and later took a full treatment, resulting in an apparent cure.

As to the discussions on the subject of psychoses associated with atabrine, first of all we should take into consideration the incidence of mental disturbances. For instance, in civilized countries, if you take the number of patients hospitalized and the general population you will find about two-tenths of one per cent are hospitalized in state hospitals. That does not take into consideration the number that are in private hospitals, or the number of mental disturbances that are running footloose over the country.

We know that stress and strain and sickness and so forth increase your incidence of mental disturbance. You take a thousand people with malaria, and you will expect more mental disturbance than with ordinary people. You take the same population with bad malaria, and you will have a greater disturbance. You take the same thousand people with bad malaria, what Bassett referred to a few years ago as about so many parasites in the blood cells, and shove into that thousand cases of bad malaria some drug, quinine, arsenic, atabrine, or anything else, and kill a lot of parasites,

and you will expect a big jump in your mental disturbance. I would not be surprised, if we went back and looked over our cases we have treated with quinine, if we would find we had mental disturbance in a lot of our bad cases of malaria treated with quinine.

There is another thing we must take into consideration in discussing the subject. Malaria is a serious problem. We know malaria cannot be controlled by drainage. It is a good thing, and I believe in pushing a good thing. We know malaria is hard to control with quinine. It would be helpful if we could get something else that people would take better. It is hard to get anyone, as has been mentioned several times already, to take a full treatment of quinine. I did not take a full treatment until I had about three exacerbations. If we can get something to take the place, and cure malaria quicker, we should accept such a drug with open arms. We should be glad to get it.

If we do have a few cases of mental disturbance, that is no reason we should get frightened away from atabrine. Dr. Allen has pointed out that there is no fatality among his cases, that they cleared up in an average of fifteen days, with no deaths, and none of the other fellows who have reported a little mental disturbance associated with the use of atabrine have referred to it as being anything very serious. We should not get the doctors or the people afraid of atabrine.

I wanted to read you what I copied from one of the records. We have had a few cases associated with it at the state hospital.

"Crippled, in debt, out of work, had a wife and four children, sick. Took atabrine and became addled-minded, like some others in the community who had taken that drug."

There was a community in which atabrine was used rather freely, and the informant said this fellow became "addled-brained," like others who had taken that drug. No psychiatrist saw him.

There is one thing that we should certainly do, and that is we should be open-minded in regard to this. It looks to me like the thing to do is for the medical profession to go on and use this drug cautiously, to watch very carefully and if you find any mental disturbances or any other disturbances that are unfavorable, make note of it, write it up, report it to the State Board of Health, and I am sure Dr. Abercrombie will see that this is correlated and we will know the truth about it. We want to know the truth. The folks who make atabrine want to know the truth. They want to know what the drug will do. If there is anything harmful about it they want to know it so they can remedy it. They want to know if there are any particular ways that it should be administered. You as doctors want to know the truth about this thing, and the only way to find the truth is to go on and study it, use the drug, and be very careful. Of course it is not up to me to tell a doctor to be careful, because all doctors are careful because that is their meat and bread, their meal ticket from Christmas to Christmas, their practice, but it is like the man who told the little boy: "That deer is running as fast as he can run," and the little boy said, "If I holler at him he will run a little faster." You are very careful with it, but as Dr.

Allen and others have cautioned you, you will be more careful.

If you have any unfavorable results, write them up for Dr. Abercrombie.

DR. J. W. ODEN (Milledgeville): Some of you older men, I imagine, remember when salvarsan was put on the market. It was advised then that about one dose of salvarsan would cure any case of syphilis. After a while, they recommended that half a dozen doses be given and that would cure it.

I think maybe we should be just a little bit particular about placing the cause of any mental disturbance as due to a drug unless we feel pretty positive that it is that way. Dr. Echols stated we have had some cases at the state hospital that had been taking atabrine at the time they were admitted. In one of the services, it seemed a patient came in that had taken a course of atabrine and cleared up shortly after coming in, left the institution, was restored and went home and was gone for some time and came back with the same type of mental disorder and had not been taking any atabrine. We also had a man sent to the institution who had been taking atabrine at the time his psychosis occurred. The man cleared up rather readily, and just to test this thing out, some days or some weeks after he came to the institution we thought if atabrine played a part in this we would make him have another psychosis, so we administered this atabrine to him, without any effect at all. The man did not show any mental change whatever. He had cleared up pretty well, and we kept him in the institution long enough to give him this other course of treatment.

We have had some five or six cases that were taking atabrine at the time they came in. Those two cases, to me, are rather positive that perhaps if we had any other drug, a new drug that came out, even not given for malaria, that would show up in the urine or show up some discoloration of the skin, where the laity might notice it, we might find some fault with it. You might as well say you were giving aspirin or salvarsan or any of those things at the time the psychosis occurred and that it might be accused as being the cause of the psychosis. I think we had better keep our feet on the ground and watch it for a while.

DR. J. LAWTON TYRE (Screven): If I did not think that I could contribute something to this discussion I would not dare appear on the program, but having had quite a bit of experience with malaria and atabrine I think that I can possibly give you some light on the treatment of malaria and in the use of this drug and the elimination of the bad effects of it.

When I first saw the effects of atabrine in malaria, the yellow cachexia that the patient had, I was rather skeptical about its use. About that time a book salesman came along and I bought a Beckman, Seventh Edition. In Beckman's article on the treatment of malaria he recommended that you give atabrine for three days and then discontinue it for two days. I did that, and after I commenced to do that I had no further cachexia with atabrine. About the third day the kidneys will begin to throw off the dye and the urine will turn yellow. If you leave it off two days and then continue it, you will not get much cachexia, if any.

In reference to the use of quinine, it is not soluble except in an acid medium. We oftentimes give it in capsules, and possibly if we do the patient swallows the capsule and it passes into the small intestine where it is not absorbed. I happened to stumble onto a method of getting an absorption from quinine. Many times I prescribe quinine and atabrine combined, for a poor class of patients, and tell them to get a dozen capsules and have them open the capsule and put a grain and a half of atabrine in the capsule and then take a needle or a pin and puncture the end of the capsule, which allows the gastric juice to enter the capsule from within as well as without. In that way you get absorption of your quinine in the stomach instead of allowing it to pass into the intestinal tract where you get no effect from it.

As to the psychosis in the administration of atabrine in malaria, I have seen none of it, and I believe if you will give it for three days and discontinue it for two you will not see any more psychosis or atabrine cachexia from the use of atabrine through the skin.

DR. H. D. ALLEN, JR. (Milledgeville): I wish to thank the doctors for their liberal discussion of this paper and I wish to thank Dr. Sanford in particular for reminding us as physicians, we deal with frail human beings and that persons in poor health react to toxic substances differently from persons in good health.

We are prone to think with the allergists at this time, that there are certain susceptible individuals and that these cases fall into an allergic group. However, chemical tests on both alcohol and bromide contents of the blood show rather definite levels of intoxication and susceptibility is a failure in elimination and a resulting concentration in the body tissues. This type of susceptibility is dependent upon bodily well being which is variable from time to time rather than a fixed susceptibility which is my conception of an allergic condition. We are in need of a simple clinical test for the concentration of this drug in the blood, or the elimination of the drug in the urine, before these reactions to atabrine can be better understood.

This is a very new drug that has only been used extensively in the past three or four years. However, in this short time it has been used so extensively, a purely coincidental relationship between the drug and these mental reactions has to be considered, the incident of the mental reaction being about one to each two thousand treatments, the seventeen cases reported by Kingsbury occurring in the course of seven thousand treatments.

Dr. William F. Snow, General Director of the American Social Hygiene Association, in a recent statement says: "Greater progress will be made in 1937 than in any year since the World War in the campaign to stamp out syphilis and reduce the widespread prevalence of gonorrhea in the United States. We can stamp out syphilis, just as many other dangerous diseases that once threatened health and life itself have been stamped out. The problem now is to see that our knowledge is used for the benefit of the millions who need it."

TUBERCULOSIS OF THE SKIN ROSACEA-LIKE TYPE†*

Report of Case

HOWARD HAILEY, M.D.

Atlanta

The first description of rosacea-like tuberculosis of the skin was published by Lewandowsky¹ in 1917. MacKee and Sulzberger² and Wile and Graner³ have reported several cases and reviewed the literature. In the recent edition of the textbook by Ormsby⁴ the condition is described. Less than 25 cases of this form of tuberculosis of the skin have been reported in the American literature. As far as I have been able to determine, not a single case has been reported from the South. I have had one patient in private practice whom I was unable to follow (her tuberculin test was positive on two occasions). The case reported is a clinic patient and she is still under observation and treatment. I saw a third patient in St. Louis in November, 1935, presented by Dr. Garold Stryker before the Section on Dermatology and Syphilology of the Southern Medical Association. Dr. Stryker's patient and my two patients were women.

Case Report

On June 31, 1936, a white female, aged 38, was admitted to the Dermatologic Clinic (white division), Grady Hospital, complaining of a rash on her face. Her family history revealed that her mother spent 14 months in a sanatorium for tuberculosis. Patient was told by her physician in July, 1928, that she had pulmonary tuberculosis. She attended a clinic for tuberculosis from July, 1928 until April, 1934. The rash appeared on her face in March, 1934. At that time she was treated for eczema, but the condition failed to improve. For the past two years she has had no treatment. She stated that the rash improved and relapsed independent of treatment. The patient noticed that the condition of her face became worse when she was excited.

Examination showed a profuse eruption over the forehead, cheeks and chin. A few lesions were present on the nose. The lesions were pinpoint to pinhead in size and reddish-brown in color. Under diascopic pressure, the lesions were yellowish-brown in color and appeared to be within the skin. There were a few

†From the Department of Dermatology, Emory University School of Medicine, service of Dr. Howard Hailey.

*The patient described in the above case report was presented before the Southeastern Dermatological Association, Atlanta, Sept. 6, 1936.

Submitted for publication Nov. 24, 1936.



Fig. 1
Tuberculosis, Rosacea-like type. The nose is normal in color with very few tuberculous lesions.

pinpoint pustules on the cheeks. After the patient's entrance into the examining room, the erythema of the cheeks deepened, which, no doubt, was the result of emotional reflex action. The color of the nose was normal. There were no lesions on the skin or other parts of the body.

July 28, 1936, chest films revealed calcified lesions in both lungs. The report of the radiologist was: moderately advanced tuberculosis—chronic type, slightly active.

July 28, 1936, tuberculin test, using strength No. 1 (.00002 mg.) was negative. Wassermann negative. Blood count: red cells 4,170,000; white cells 9,100. Differential count: Polymorphonuclears 65. Small 25. Large 5. Eosinophiles 5.

August 4, 1936, tuberculin test strength No. 2 (.005 mg.) gave positive reaction.

August 4, 1936, biopsy over right jaw. Pathologist reported: chronic tuberculosis of the skin.

Comment

This disease must be differentiated from rosacea. The diagnosis was made in this case on the distribution of the lesions (nose practically free of eruption); the color, size and depth of the lesions; the family history; the personal history (including chest films); a positive tuberculin test; and failure of the condition to respond to treatment for "eczema" in another clinic. The diagnosis was confirmed by the pathologist from the biopsy specimen.

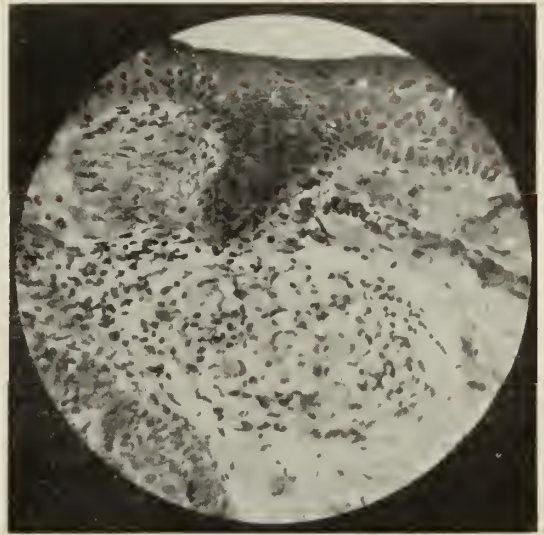


Fig. 2.
Photomicrograph showing lymphocytes and giant cells beneath the epithelium.

The patient is now receiving 10 mg. of Gold and Sodium Thiosulphate, hypodermatically, every other day. A soothing, mildly astringent lotion is being used locally. At present there is definite improvement in the condition.

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MOGENS FOG, Copenhagen, Denmark, (*Journal A. M. A.*, Dec. 19, 1936), reports a case of anhidrosis in a patient in whom cessation of the function of sweating occurred after he had previously been perfectly normal in this respect. The patient, aged 27, until a long febrile illness (paratyphoid fever) six years prior to the examination had had normal sweat secretion. He complained of extremely distressing symptoms under circumstances in which sweat secretion normally takes place. By means of a series of pharmacologic and physical tests the author verified the patient's statement that he could not perspire. A biopsy from the skin showed that about one-half of the sweat glands were present while the other half had undergone degeneration. By means of a number of muscular activity experiments it was determined that during increased heat production in the body the patient's heat regulation was normal but that signs of circulatory insufficiency arose which must be ascribed to extreme vascular dilatation in the skin. This forms the basis for a compensating, excessive loss of heat through conduction and radiation. Continued observations of the patient during two years and a half showed that the symptoms remained unchanged.

The Julius Rosenwald Fund has made a grant of \$165,000 to the Committee on Research in Medical Economics to be used over a period of five years.

THE SURGICAL CORRECTION OF
CROSSED EYES*WILLIAM O. MARTIN, JR., M.D.
Atlanta

The care of crossed eyes has received a great deal of attention within recent years, and the methods of treatment have been greatly improved. We are no longer content with merely refracting and prescribing glasses with the vague hope that the child will outgrow his deformity. Such methods as atropinization or occlusion of the fixing eye, for an hour or two a day, have proved inadequate. These, and other passive measures, have been discarded in favor of more active and energetic forms of treatment. It is known now that defective vision in the squinting eye is the result of the squint, rather than that the squint is the result of defective vision.

Regardless of the method employed, early correction of the strabismus is important for the following reasons: first, to prevent loss of vision; second, to develop fusion, that is, the ability of both eyes to see the same object simultaneously without diplopia; third, to prevent the development of an inferiority complex; and fourth, to obtain a better cosmetic result.

There are many types of squint, or tropias, but we will confine our remarks to the convergent type or esotropia. This may be classified in the following manner: first, periodic squint; second, refractive or accommodative; third, pseudoparalytic; fourth, paralytic; fifth, retraction syndrome; sixth, alternating; and seventh, concomitant.

The periodic squint is often overlooked and neglected. It usually begins as a convergence excess, that is, a tendency for the eyes to turn in, and is more pronounced when the child is tired or weakened by illness. If a high degree of hyperopia exists, glasses, properly prescribed, will often prevent development of a true squint. If treatment is delayed with the erroneous idea that he may outgrow the defect, a permanent squint will generally result. At the time of examination the eyes may be perfectly straight, and one may make the mistake of overlooking the

condition and assuring the parent that his fears are unfounded. On the other hand, if a careful muscle examination is made, an excessive near point of convergence, with an esophoria for near, will be elicited. This, together with the history of periodic crossing, clinches the diagnosis.

The refractive or accommodative type is the result of a high degree of hyperopia. We know that there is a definite relationship between accommodation and convergence, and that when one is stimulated the other is likewise. So, in excessive stimulation of accommodation there is an accompanying excessive stimulation of convergence. By correcting the refractive error in cases of hyperopia, the accommodative effort is lessened; and if this is done early enough the eyes may be straightened. Conversely, it will readily be seen, that in cases of myopia or very small degrees of hyperopia, glasses will not straighten the eyes.

Paralytic squint due to abducens paralysis, in infants or young children, is far less common than might be thought. Cases of pseudoparalysis are often incorrectly diagnosed as paralysis. The etiology of this is usually attributed to a birth injury or to an intracranial hemorrhage. In the adult, abducens paralysis is generally of luetic or rheumatic origin. In true cases of paralytic squint, surgery is of great aid; but, needless to say, every possible etiologic factor should be searched for and eliminated, if possible, before surgical intervention is resorted to. The paralyzed external rectus may be strengthened by shortening, and may thus obtain some function. By weakening its antagonist, the internal rectus, its action may be further increased. Abducens paralysis may be either unilateral or bilateral. If bilateral, the vision is usually equally good in both eyes. It is no longer believed that most cases of esotropia begin as a paralytic squint.

Pseudoparalytic squint is rather common. It is usually the result of a hypertensile, or overacting internus, which prevents the externus, already weakened by disuse, from abducting the eye. A wrinkling or puckering of the globe, at the site of attachment of the internus, may occur on attempted abduction.

If the eyes are alternately occluded with a ground glass for periods of two months,

*Read before the Medical Association of Georgia, Savannah, April 24, 1936.



Fig. 1

Fig. 1a

54 Yrs. of age with 40 degrees of arc of squint. Had had exercises without improvement. Op. Resect. and Recess.



Fig. 3

Fig. 3a

32 Yrs. of age with 25 degrees of arc of squint. Op. Resect. and Recess.

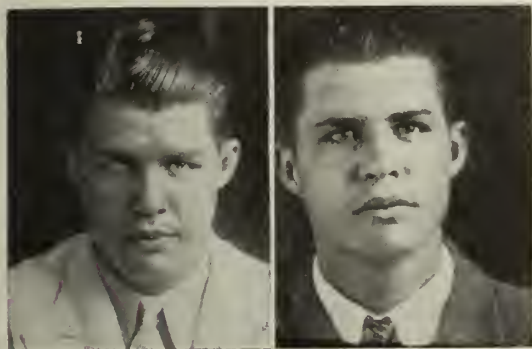


Fig. 2

Fig. 2a

18 Yrs. of age with 30 degrees of arc of squint and a spasm of inferior oblique. Op. Resect. and Recess.



Fig. 4

Fig. 4a

6 Yrs. of age with 45 degrees of arc of squint. Exercises did not improve. Op. Resect. and Recess.

motility is often obtained. Atropinization is rarely efficacious; and occlusion with a patch, for two or three hours a day, is utterly useless. Various types of shields have been devised; but a ground glass is much less noticeable, and just as effective. In some cases, one cannot be certain that a true paralysis is not present until the internus is grasped by forceps, and the pull of the externus, on attempted abduction, is felt.

Retraction syndromes, while very rare, do occur. These were described by Duane, many years ago, and are often referred to as Duane's syndrome. They are due to a congenital fibrosis of the external rectus, unilateral or bilateral. The muscle is replaced, partially or entirely, by fibrous tissue. On adduction, there is retraction of the globe, and narrowing of the palpebral fissure. Abduction is almost absent. The cosmetic appearance may be improved by receding the internus; but under no condition should the externus be shortened.

Alternating squints probably result from a faulty fusion center. In these, both eyes fix equally well, and have equally good vision,

and usually the refractive error is small or negligible. The vision is not impaired, due to the fact that both eyes are used alternately. These eyes are straightened only by operation, and never by glasses. Even then, it is doubtful that fusion ever develops. The same operative procedure as for concomitant squint may be adopted here. The deviation may be corrected by operating on only one eye, or both, depending on the amount of deviation. Too large a recession weakens convergence, and thereby causes asthenopia.

Concomitant or constant squint usually develops from an uncorrected periodic squint. There is often a history of some intercurrent illness, such as measles, whooping cough, etc., following which the squint developed. The squint is often attributed to one of these conditions; but in reality, there already existed a convergence excess, and perhaps a periodic turning in of one eye, which may not have been noticed. When a child is weakened by illness, he can no longer hold the eyes straight enough to maintain fusion and one eye turns in, usually the weaker one. At



Fig. 5

Fig. 5a

6 Yrs. of age with 42 degrees of arc of squint. Op. Resect. and Recess.



Fig. 6

Fig. 6a

1½ Yrs. of age with 30 degrees of arc of squint. Op. Resect. and Recess. Alternating type of squint.

first he sees double, and consequently, may fall frequently and seem clumsy. This diplopia disappears within two or three years, sometimes sooner, because he learns to ignore the false image by suppressing it. The vision of the squinting eye becomes impaired due to this suppression rather than to any disease within the eye or brain. This is one reason why the squint should be corrected, if possible, within the first year after its development. Another reason, previously mentioned, is the development of an inferiority complex. This becomes more pronounced when the child starts to school, at which time he becomes more aware of his deformity.

In the treatment of squint, a careful history should be obtained, and vision determined, if possible. The deviation should be measured before and after cycloplegia, and with and without correcting lenses; and the motility of both eyes carefully noted, especially for an overacting internus or under-acting externus.

Refraction should be done under atropine cycloplegia. The deviation may be measured in any one of several ways; by the Priestley-Smith tape, perimeter, Hirshberg's corneal reflex, or screen test. It makes little difference which method one uses so long as he is able to obtain an accurate measurement. The deviation should be measured both for distance and for near, and the convergence power also determined.

The question of orthoptic training, fusion training, and muscle exercise has flared up again with the added attraction of impressive and elaborate stereoscopes bearing assumed names. Thus far I have not seen a case of squint corrected by this means, but

I have corrected by operation many cases that had been treated by this method unsuccessfully.

It is never necessary to "try glasses" to see if they will straighten the eyes. Complete atropine cycloplegia will give one the desired information. If the squint is not helped a great deal by this, then glasses will never correct it, so we should not delay treatment with this faint hope in mind.

If the eyes are straight with glasses and the glasses are worn constantly, operation should not be advised. However, when one is convinced that other measures will not correct the squint, an operation should be performed. There is no arbitrary age for operating. I have operated on children as young as two years of age and on individuals as old as sixty-five. As soon as operation is decided upon, delay is a waste of valuable time.

General anesthesia does not add to the difficulty of the operation. Equally as good results can be obtained under a general anesthetic as under a local one.

The problem or rationale of operation is purely one of physics; namely, to shorten the externus, and lengthen the internus. Tenotomy, whether total, partial, or guarded, for the purpose of weakening the internus, should never be performed. It is a poor surgical procedure, and is neither scientific nor accurate, because the surgeon is unable to determine or control where the muscle will become reattached. In many cases it does not reattach itself at all and a subsequent divergence occurs producing a deformity worse than the original.



Fig. 7

Fig. 7a

5½ Yrs. of age with 25 degrees of arc of squint. Op. Resect. and Recess.



Fig. 9

Fig. 9a

8 Yrs. of age with 40 degrees of arc of squint. Op. Resect. and Recess.



Fig. 8

Fig. 8a

18 Yrs. of age with 35 degrees of arc of squint. Op. Resect. and Recess.



Fig. 10

Fig. 10a

17 Yrs. of age with 30 degrees of arc of squint. Op. Resect. and Recess.

Each surgeon should use the type of operation that he feels best able to perform. The operation most generally preferred for lengthening the internus is the recession. There are several operations for shortening or strengthening the externus; such as resection, advancement, tucking and cinch. My own preference is the Jameson recession, and the Reese resection.

Very often the question is asked, "How many degrees of squint can you correct by a given number of millimeters of recession?" This is difficult to answer for we have no hard and fast rule. We must be governed by the degree of squint, the motility of the eye, and the condition of the muscles, as well as by our own personal experience and judgment.

In cases of high degree of hyperopia, we prescribe weak lenses when the eye is overcorrected; and strong lenses, when it is undercorrected. This gives us some degree of latitude, and is of great aid in accomplishing a good cosmetic result.

When one is dealing with an overacting internus, and an underacting externus, more

correction is needed, that is, a larger resection and recession. Shortening a muscle increases its action, and in cases of paresis of the externus, satisfactory motility can often be obtained by resection or shortening.

It is often possible to operate on children seven or eight years of age under local anesthesia. If the surgeon is careful not to pull on the muscles, very little pain is produced. In this, as in handling the peritoneum, traction, rather than cutting, causes the pain.

Four naught (0000) ten day chromic catgut has replaced silk sutures, especially in children, because it obviates the necessity of removal.

The eye operated upon is kept closed with a dressing for about a week, unless a conjunctivitis develops. If so, the patch should be left off, and hot applications applied several times a day. Close work should be avoided for two or three weeks after the operation.

After the eyes have been straightened, we sometimes prescribe stereoscopic exercises to aid in the development of fusion.

Since squints can be corrected, no one should be allowed to go through life so han-



Fig. 11
9 Yrs. of age with 20 degrees of arc of squint. Op. Resect. and Recess.

Fig. 11a

dicapped. The medical profession can aid greatly in dispelling fears by enlightening the public as to the progress made in the treatment of crossed eyes.

I wish to stress the fact that to postpone operation with the hopes that the child might "outgrow it," is to be strongly condemned. A squint is a great handicap to a woman socially, and to a man in business. It is up to the medical profession to do its part by informing the public that crossed eyes can be successfully straightened by operation, and rarely by exercises or glasses, and the earlier the eyes are straightened the better the end results.

The ninety cases of tuberculosis of the hip that have been admitted to the New England Peabody Home for Crippled Children in the last forty years are the basis for JOSEPH S. BARR'S Boston (*Journal A. M. A.*, Nov. 7, 1936), data and conclusions: The present status of all but sixteen of the cases is known. Tuberculosis of the hip is often misdiagnosed (15 per cent of this series). The chief causes of death are tuberculosis meningitis and secondary infection of draining sinuses. For the first of these causes no therapy is available. The second one can be reduced to the vanishing point by scrupulous sterile dressing of sinuses and by refrainage from any surgical intervention during the active stages of the disease. Tuberculosis of the hip runs an extraordinarily variable course. Heliotherapy seems to have no specific curative effect on the disease. The word "cured" should be dropped for the more conservative "arrested." Fusion of the hip was successful in eighteen of a series of twenty-three consecutive cases. Failure of fusion was due apparently to extension of the disease to the grafts. In a few instances even after successful fusion in apparently arrested cases there was evidence of active disease present when the follow-up study was made. Arrest of the disease with a useful range of motion occurs too rarely to make it an expected result in conservatively treated cases. Fusion is not a "cure" but offers the best chance for an arrested disease process to remain quiescent and give a stable weight bearing limb. Complete bed rest and interdict surgery during the acute stage of the disease is advisable.

DISEASE OF THE RESPIRATORY AND UPPER ALIMENTARY TRACTS*

*Endoscopy as an Aid to the
General Practitioner*

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Endoscopy is defined as the direct inspection of any cavity of the body. In the respiratory and alimentary tracts it relates especially to the direct inspection of the bronchi, trachea and esophagus.

The development of the instruments and technic used in bronchoscopy and esophagoscopy are achievements of recent years. While the German laryngologist, Killian, removed a foreign body with the bronchoscope which he devised, the first bronchoscopy "worthy of the name," Chevalier Jackson states, was done in 1898 by an American physician, Algernon Coolidge of Boston, at the Massachusetts General Hospital. In 1904 Jackson developed his first distally lighted bronchoscope and since then his work, with his colleagues, has been the most important factor in the development of bronchoscopy and peroral endoscopy in this country. Philadelphia has become a center for the instruction of physicians in the practice and technic of endoscopy, for not only do many receive their instruction in Jackson's clinic, but five of the great medical schools in that city have courses in bronchoscopy and esophagoscopy which are open to graduates only, and are attended by physicians from this and other countries. In one of these schools—the Graduate School of Medicine of the University of Pennsylvania—over 600 physicians have received clinical instruction in these subjects (Tucker). Most students were well established otolaryngologists who carried on their work in endoscopy upon return to their homes.

Many large hospitals in other cities also have endoscopic or bronchoscopic clinics, and it would seem that with dissemination of knowledge of these subjects that their value would be widely recognized and that such clinics might be found available to every

*Read before the Medical Association of Georgia, Savannah, April 24, 1936.

community and every practitioner desiring to give his patient the benefit of these methods. I regret to say that this is not the case.

The first work which was done with the bronchoscope and the esophagoscope was the removal of foreign bodies, often as emergency measures, and the spectacular results obtained in those cases have so impressed themselves upon the minds of physicians and the laity that many practitioners still believe that the chief use of the bronchoscope is for foreign body removal. How different is the truth, as shown by those with most experience in the work of endoscopy. At Jackson's clinic approximately 90 per cent of the bronchoscopic work was the removal of foreign bodies in the early years of the work; now about 2 per cent of the patients coming to the clinic are of this type. This does not mean that foreign body cases are less numerous but there is wider recognition of the value of endoscopy in other conditions. Clerf states that in 1922 there were but two bronchoscopic clinics in the city of Philadelphia, and a total of 842 endoscopic procedures were carried out in one of them—the clinic at Jefferson Hospital; about 12 per cent of these were foreign body cases. Ten years later, in 1932, there were 13 bronchoscopic clinics actively functioning in the hospitals in that city, and 3,788 endoscopic procedures were carried out at the Jefferson Hospital clinic alone, approximately 2.5 per cent of which were for foreign bodies. At the bronchoscopic clinic of Mt. Sinai Hospital, New York City, Yankauer states that the cases admitted for medical bronchoscopies, that is for diagnosis and treatment of diseases of the lungs, outnumbered the foreign body cases 10 to 1. Of 400 patients admitted to an endoscopic clinic at the Kinston (North Carolina) Hospital, only 67 were for the removal of foreign bodies in the trachea, bronchus or esophagus; all others were admitted for the diagnosis and treatment of disease.

With modern methods of endoscopy it is possible to look into the bronchi, trachea and esophagus and see not only foreign bodies but tumor growths, suppurations, strictures and the condition of the mucosa. The roentgenologist, Jackson says, looks through the organs, the endoscopist looks into them. Both, I may note, are a necessity for complete diag-

nosis in many cases. Bronchoscopy is the only method by which malignant growths of the bronchi can be diagnosed in the early stage, not only by the appearance of the growth but by obtaining specimens for biopsy. With early diagnosis, early treatment is made possible, either by bronchoscopic methods, roentgen-ray treatment or lobectomy. In patients with obscure chest symptoms and negative or indefinite x-ray findings, bronchoscopy is the only method of determining the actual lesion present. Bronchoscopy is not indicated for diagnosis in patients with frank tuberculosis with positive sputum, but there are many patients in whom symptoms are suggestive of tuberculosis but no positive diagnosis can be made. For this reason, bronchoscopic clinics have been established in some sanatoriums for tuberculosis; at the Maryland State Sanatorium, where such a clinic has now been in operation for several years, it is "a common occurrence," Looper says, "to discover and accurately diagnose by bronchoscopy, carcinoma of the lung, ulcers of the bronchi, polyps, bronchiectasis, fungus infections, foreign bodies and lung abscess in patients in whom every other possible method of diagnosis had been tried without success." Such patients may receive appropriate treatment for the condition found, whereas formerly they would have stayed indefinitely in hospitals being treated routinely for tuberculosis. At the Rutland State Sanatorium, Massachusetts, bronchoscopic study of doubtful cases has proved of equal value, often permitting the early diagnosis of such conditions as bronchiectasis, pulmonary abscess and carcinoma at a time when cure was possible.

Bronchoscopy is of value in the treatment of many of these conditions as well as for diagnosis. Pulmonary abscess has been treated by bronchoscopy in certain clinics ever since Yankauer first called attention to its value in this condition in 1916. As early as 1925 an increasing number of patients with pulmonary abscesses were being referred to the Jackson Clinic for treatment; most of these patients were ambulatory. In 1931, Moersch reported 105 patients with pulmonary abscess treated by bronchoscopy at the Mayo Clinic; in five foreign body was the cause. Of these, 51 patients were cured and 16 im-

proved. In 28 patients in whom the abscess had been present less than three months, 69 per cent were cured. This showed clearly the advantage of early diagnosis and treatment.

As tonsillectomy is the most frequent cause of pulmonary abscess, patients showing symptoms of suppurative lesions of the lungs after such an operation, should be promptly submitted to bronchoscopic study. Early bronchoscopic drainage clears such an abscess promptly as a rule and prevents the development of a chronic condition. Bronchoscopy is indicated also in the treatment of bronchiectasis; in the earlier cases, cure may be obtained; in the more chronic cases bronchoscopy, if not curative, at least gives marked relief, diminishing cough, preventing the foul odor and improving the patient's general condition. Bronchoscopy has also been found to be of definite value in the treatment of some patients with asthma where allergy is not the chief etiologic factor. At the Mayo Clinic, bronchoscopy is considered to be indicated in patients with asthma in whom there are physical signs of chronic bronchial obstruction (Prickman and Vinson). If there are secretions blocking the bronchi, the bronchoscopic removal of these secretions gives marked relief. At the Bronchoscopic Clinic of the Massachusetts Eye and Ear Infirmary, Boston, the best results in the bronchoscopic treatment of bronchial asthma have been obtained in patients having thick, "sticky" secretion in the lower air passages. Removal of such secretions with the bronchoscope always gave relief and sometimes effected a cure (Weille).

If I have given most of my time to the discussion of bronchoscopy, it is because I feel so strongly the importance of this method in the diagnosis and treatment of chronic conditions—or conditions liable to become chronic and which cause untold suffering unless they are promptly and adequately treated by modern methods. Esophagoscopy, in its field, is of no less importance. It, too, is of great value for the removal of foreign bodies and for the diagnosis and treatment of other conditions in the esophagus. It has been said by Watkins that: "No organ in the body yields less readily to surgery than the esophagus," and for this reason this procedure is of importance in dealing with lesions of the

esophagus as in most cases it offers the only avenue of approach. By esophagoscopy, ulcerations, erosions, strictures and diverticula, as well as tumors, can be diagnosed and often treated, or at least, the best methods of treatment accurately determined. With the use of the esophagoscope, strictures caused by the swallowing of caustic substances can be promptly diagnosed and treated. Carcinoma of the esophagus may be diagnosed in its early stage and treated by endoscopic methods with marked palliation of symptoms and the prolongation of life, if not an actual cure. Esophagoscopy was in use to some extent before bronchoscopy, but it has reached its present development only concomitantly with bronchoscopy, and owing to the efforts of the same group of men who have done such notable work with bronchoscopy.

The use of the gastroscope has been developed chiefly in Germany, but in the last few years has been used in some of the larger clinics and hospitals in the United States, including Jackson's clinic, Jefferson Hospital and the Massachusetts General Hospital. Gastroscopy is employed chiefly for diagnosis and has proved a valuable adjunct of the x-ray, especially in the diagnosis of peptic ulcer, carcinoma and gastritis. It is often possible to locate an ulcer with the gastroscope that is not shown by the x-ray. Malignant ulcers have an entirely different appearance from benign ulcers, as demonstrated by Schnidder. It has been found of special value in the diagnosis of gastritis, demonstrating this lesion clearly where the most modern methods of x-ray study show no organic lesion. This has been of special value at the Jackson Clinic in cases in which a diagnosis of "hysterical gastric neurosis" had been made before the condition of chronic gastritis was definitely demonstrated. At the Jefferson Hospital, the gastroscope has been used for the removal of foreign bodies from the stomach in cases in which roentgenologic study indicated that the foreign body would not pass spontaneously; or if the body is of such a nature as to cause injury to the gastric walls, or fails to leave the stomach within a reasonable time. Other uses for the gastroscope in treatment may soon be found, as its use is further developed.

I have brought the subject of peroral endoscopy to your attention, because it seems to be so important that the general practitioner should recognize the value and the importance of these methods. It is upon him, I believe, that the future development of endoscopy depends. He should recognize its importance as a routine method of diagnosis in certain cases, rather than as "an emergency of last resort," Hiel. Not every general practitioner can be, or need be, an expert in the use of endoscopic methods, but every practitioner should be fully aware of the value of these methods and their indications in cases that come under his observation. He can realize how the problems in many of his troublesome patients can be solved by these means. Every community having a hospital should aim for the establishment of a bronchoscopic clinic. "The time will come," Tucker of the University of Pennsylvania, "when a bronchoscopic clinic will be as much a part of a hospital that treats pulmonary diseases as is the roentgenological department."

At the Lenox Hill Hospital in New York City, where an Endoscopic Clinic has been in existence for more than ten years, it is recognized that the bronchoscope and the esophagoscope are rapidly becoming instruments of diagnosis, almost as indispensable as the laboratory, the roentgen-ray or stethoscope. It has also been the experience at this clinic that if a clinician once allows a bronchoscopy on a patient, he becomes an ardent advocate of bronchoscopy and thereafter is enthusiastic concerning its possibilities. So it is to be hoped that every physician here may become an ardent advocate of endoscopy through trial of the method for some of his patients, and that the development of endoscopic methods and facilities for their use may proceed rapidly through our efforts throughout the State of Georgia.

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NEW MEMBERS FOR 1937

Andrews, Chas. R., Canton.
 Bennett, J. L., Trion.
 Bowdoin, W. H., Statham.
 Bowen, U. S., Palo Alto, Cal.
 Brandon, R. V., McDonough.
 Bryson, R. I., Augusta.
 Davis, Claud L., Alma.
 Duckett, A. W., Blue Ridge.
 Goss, N. C., Ellijay.
 Harris, W. P., Dublin.
 Houston, W. H., Colquitt.
 Kitchens, O. W., Byromville.
 Martin, Samuel W., Hazlehurst.
 McArthur, C. E., Cordele.
 Miller, W. A., Arabi.
 Price, J. M., Tifton.
 Purse, Ashby, St. Simons Island.
 Ryan, W. P., Albany.
 Sams, F. H., Reynolds.
 Sharpe, W. W., III, Alma.
 Sherrer, G. W., Rayle.
 Twitty, C. W., Newton.
 Venable, John H., Decatur.
 Vinson, T. O., Macon.
 Wheelchel, Fred C., Alto.
 Wright, John C., Augusta.

Under compulsory health insurance in Germany doctors are decreasing in numbers, and bureaucratic clerks and functionaries are increasing, and now outnumber the doctors.—*Medical News*, Medical Society of the State of New York.

DYSENTERY (INFECTIOUS DIARRHEA) IN CHILDREN

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Classification of the various types of diarrhea is difficult at times. Fortunately, the fundamental principles of treatment of the various types are so nearly alike that for a mild attack a clinical classification may be accepted. A child may be affected by chemical decomposition of foods. Certain infants may tolerate a diet during cold months and do poorly on the same diet during warm weather. A large number of infections with the *bacillus dysentery* occur, usually giving a distinct clinical picture in which there are true inflammatory lesions of the intestinal tract, as compared to the non-specific types of diarrhea having practically no pathologic changes. Rarely, other organisms present a similar picture, such as the *bacillus typhosus*, *bacillus pyocyaneus*, *bacillus tuberculosis* and a few others. If routine blood cultures are taken from all patients suspected of dysentery, a small percentage will show the *bacillus typhosus* in the blood stream.

Contamination of food and water supplies causes the great majority of cases. Occasionally children contact the disease from a carrier; more often, an adult has the disease in a mild form, and passes it on to an infant who is made extremely ill and may even lose his life. The incubation period is short, usually from four to five days.

Although children of any age, at any season of the year, acquire the disease, those under two years of age are most often affected and the greatest number of cases occur during the summer months. In the early fall months epidemics are not uncommon. While usually primary, dysentery may follow any other infectious disease and conditions. All forms of intestinal disease are particularly predisposing causes.

The inflammatory lesions occur chiefly in the colon, and in a smaller number, perhaps half of the instances, in the lower portion of the ileum. At first the lesion is a diffuse inflammation of the mucosa. The mucosa is swollen, reddened and occasionally covered

by an opaque, yellowish membrane. The vessels are dilated. Later punctate hemorrhages are seen. From this area the secretion of mucus is increased. As the process advances, ulcerations of various sizes are seen. Perforation is rare. The mesenteric lymph nodes are enlarged.

The symptoms are usually characteristic. A child vomits, has fever and evacuates eight or ten loose stools. The following morning blood and mucus appear in the stools. The constitutional symptoms are variable. A child may have blood and mucus in the stool, little or no fever and appear quite well. Another child may suffer from marked prostration, have a high fever, and even die within forty-eight hours. Prostration, rapid dehydration and emaciation are the usual symptoms.

The duration likewise is variable, the average being about two or three weeks for the acute symptoms. One child may make a rapid recovery from the acute stage. Another child may be ill for weeks, or even months, and not recover until cooler weather.

The stools have a foul odor, closely resembling rotten cantaloup. The amount of blood and mucus is variable. Small streaks only may be present, or as much as half a teaspoonful or more, may occur. The patient may go for several days without blood in the stools and then begin again to evacuate blood. Usually, after a few days the blood begins to disappear, or is seen only in traces.

Abdominal pain is usually present. Tenesmus is at times marked, being more intense just before a bowel movement. Prolapse of the anus is a frequent and distressing complication. Complete recovery is always slow. It may be weeks before the child regains his loss of weight and appetite and digests his food normally.

In children who have been poorly nourished previously, as in institutional practice, the disease may be more marked by its chronicity than its severity. These children emaciate, sometimes to almost unbelievable stages. They have only a slight fever, even when in extremis. The stools are frequent, contain a large amount of mucus and a variable amount of blood. Their weight often drops steadily downward, but sometimes remains station-

ary. Bed sores develop easily. Their appetite is lost and they have to be fed with a tube. The abdomen is usually moderately distended and feels like dough. Superficial ulcers form upon the membranes of the mouth or eyes. If recovery takes place, relapses are common.

There is no specific treatment for infections with the *bacillus dysentery*, which accounts for the wide variation in treatment. Frequently, these children are medical emergencies and should be accepted only as such. The proper control of dehydration usually causes the most serious problem. Acidosis, not to be temporarized with, may be an equally serious symptom.

The chief losses to the tissues are water, sodium and chloride, and replacement of these is important. Potassium, phosphorus and other minerals may, of course, be lost in large quantities. Various solutions simulating physiologic salt solution have been used to replace these substances. The introduction of fluids by mouth should always be attempted first, but frequently an insufficient amount is taken or retained. For oral administration half normal salt solution (about 1 level teaspoonful to a quart) should be used. Normal saline may be given intravenously, intraperitoneally or by hypodermoclysis when indicated, and it may be given twice a day until sufficient fluid can be retained by mouth. The child's caloric requirement can be ignored for the time being.

The treatment of acidosis always provokes discussion. Chiefly, it is accomplished by combatting the reaction of the blood with sodium bicarbonate given intravenously. Unless chemical studies of the blood are made, however, it is difficult to regulate the dose. For this reason Hartman suggests the use of a solution containing lactate to avoid alkalosis and tetany.

Drugs by mouth, except certain opiates, usually play a minor part in treatment. The universal practice of purging has almost been discontinued. Bismuth preparations at times have some effect on the number and character of the stools. Opiates are indicated when the stools are frequent and there is tenesmus. Paregoric, 10 drops every 3 or 4 hours for a 6 months' old infant may be used. Morphine, in small doses, hypodermically, gives relief.

When the patient is seen early, a brief period of starvation, some 12 to 24 hours and not longer than 48 hours without the assistance of parenteral fluids, seems beneficial. After this period food may be resumed. Milk to which some form of acid has been added (as lactic-acid milk, or protein milk, etc.) appears to be most beneficial. The usual problem is to supply sufficient intake of food to combat that which is lost in the increased number of stools. For older children a bland diet used as in other acute febrile diseases may be indicated, such as cooked cereal, toast, crackers, broths, soups, soft egg, etc. Fats, sugars and rich foods are poorly borne.

From the standpoint of prophylaxis, several points are significant. Children should not come in contact with others having diarrhea. All foods should be carefully supervised. Only sterile milk should be fed to small infants. For older children, milk properly pasteurized should be urged. Only water from known sources should be used, and if there is any question it should always be boiled. Since dysentery, like typhoid fever, is contracted by oral administration, avoidance of flies, isolation, supervision of food and water supplies will go far toward prevention, particularly during the hot months.

PRESENT STATUS OF CYSTOMETRY

D. K. ROSE, St. Louis (*Journal A. M. A.*, Nov. 7, 1936), believes that the clinical value of cystometry lies chiefly in its identifying the bladder to clinicians as an organ of practical physiologic importance in differentiating all types of neurogenic from physically obstructed bladders, so that treatment may have a better foundation, and in offering bladder function tracings to explain symptoms and determine the results of treatment in dysuric bladders. Clinically, it quite alters the usually accepted view of bladder importance in prostate and bladder surgery, particularly in relation to infection. It differentiates types of dysuria after surgery, childbirth, trauma and disease or injury of the brain or spinal cord. For experimental work undoubtedly a continuous graph is necessary, but for clinical or bedside work methods of interrupted readings, that is, introducing 50 cc. and then taking a reading, are satisfactory. A second tracing at each examination is absolutely necessary, not to verify the first but to note on the second curve the influence of the first filling. In general the normal or irritable bladder is stimulated to decreased capacity and increased pressure, while the low sensation type of neurogenic bladder shows diminished sensation with increased capacity after the distention of the first filling.

THE EARLY DIAGNOSIS OF CANCER OF THE PROSTATE*

Undoubtedly cancer of the cervix in women is now recognized much earlier than it was before attention was sharply and repeatedly drawn to the importance of prompt attention to an unexpected flow of blood. No such concerted effort has been made to recognize early cancer of the prostate. Yet its high incidence in obstructing and hypertrophied prostates should force us to suspect and look for malignancy whenever there is a weak stream, urgent desire to urinate or other bladder symptoms.

To wait for the presence of blood in the urine involves great danger as this is a late—not an early symptom of cancer of the prostate. Infection in the urine, frequency of urination, residual urine, and cachexia are also late symptoms.

For years we have been searching for an early and dependable symptom which the man of forty-five years and older could regard as a reliable warning. So far the only one found to be dependable is the lack of force of the urinary stream which is almost always present in cancerous or obstructing prostates. Unfortunately, elderly men attribute the weak stream to advancing age; this serious error often leads to tragic consequences, just as the unexpected show of blood in women, when regarded as an aging process, leads to late diagnosis of cancer of the cervix or uterus. Still more unfortunate: no insurance company requires information about the force of the urinary stream and very few doctors ask about the stream as to whether it is weak and slow at times in starting, especially early in the morning or after long automobile rides. Consequently much time is often lost before a diagnosis is made.

When palpated a prostatic cancer is recognized as a distinct hardness, much harder than is benign hypertrophy and it is more fixed to the surrounding tissues. Early or even advanced cancer of the prostate is not tender as is acute or subacute inflammation and there is little if any pus in the secretion which comes out of the meatus after such examinations. In all physical examinations of men forty-five or older the prostate should be felt and

abnormal things noted, especially hard areas which if not due to calculi within the gland, are nearly always due to cancer. This, of course, is assuming that the secretion pressed out is examined for pus to exclude an inflammatory process. If a hard area is noted, seems perhaps like a stone in the prostate, an x-ray examination should be made. If this is negative and the secretion pressed out shows very little pus the hard area should be regarded as cancer until proved otherwise.

Of course, it is not intended to convey the impression that benign hypertrophy of the prostate as well as fibrous contractions of the bladder neck do not cause a weak stream just as does cancer. As a rule obstructive symptoms caused by cancer are more rapid in their course than those caused by benign obstructions. Twenty per cent of hypertrophied obstructing prostates are found to be malignant. Blood in the semen usually is not due to cancer of the prostate.

Terrible as is the pain in late cancer the beginning ones cause no pain. If they did earlier diagnoses would be made. Pain in the back is a fairly early symptom but this is usually attributed to something else. Sciatic-like pains or other pains in the legs are likely to come later. One of the great surprises is the rosy, well-nourished appearance of most of the patients with prostatic cancer until back-pressure damage to the kidneys and metastases have brought about hopelessly incurable conditions.

Tragedies of neglect are going to continue until patients are taught that a weak urinary stream is not a normal process of age or due to a weak bladder wall. The weak stream is always due to obstruction at the bladder neck or to strictures in the urethra, or, on rare occasions, to a spinal cord lesion. Atony of the bladder is no longer properly regarded as a disease.

Insurance statistics show that women at sixty have an expectancy of nearly two and a half years more than men of the same age. This, in all probability, is due to heart, blood vessel and kidney diseases caused by prostatic obstruction which hinder the elimination of the toxic substances normally passed out through the urine.

Early diagnosis of cancer of the prostate cannot be obtained until two things come

*Prepared for the Cancer Commission of the Medical Association of Georgia by Edgar G. Ballenger, M.D., Omar F. Elder, M.D., and Harold P. McDonald, M.D., Atlanta.

about:

First, the patients must know that a weak urinary stream is a serious danger signal.

Second, doctors must make it a routine in physical examinations to feel the prostate gland so as to find hard areas just as in women the breast is palpated to detect cancer of the breast. Suffering later will not be so likely blamed on the doctor if examinations are made early so as to permit patients to receive the advantage of prompt remedial measures.

COLLAPSE THERAPY IN PULMONARY TUBERCULOSIS

DANIEL C. ELKIN, M.D.
Atlanta

That surgery offers definite aid in the treatment of pulmonary tuberculosis is no longer a debated question. While many of those infected with the disease are not suitable for surgery, the indications for some types of collapse therapy are constantly being broadened and applied. The knowledge of the beneficial effects of surgery have been but slowly realized, and even now many physicians are withholding, through prejudice or ignorance, this help from their patients. No longer can it be said that these operations are usually fatal, or if not, are crippling and deforming. There is still a need of further education of physicians and patients of the value of newer methods of treatment, and of training surgeons in diagnosis, selection of cases, and in technical procedures. Thoracic surgery should be done only by those well-grounded in general surgery. In addition a sound knowledge of the physiology and pathology of the thoracic viscera is a prerequisite for the surgery of this field. The surgeon should have the advice and help of an expert in tuberculosis, or should be his own physician, since the ultimate responsibility will rest upon him.

Healing of tuberculosis is brought about by fibrous encapsulation. This is best attained by rest of the affected part and operations to this end are planned to compress, relax and diminish the movement of the lung. The good results obtained by bed rest and fresh air are due to the reduction in the depth and number of respiratory movements, the diminution of cough, and by increasing resist-

ance. While this treatment is of value in some cases, it is at best inadequate and a makeshift in controlling respiratory movements. Diminution in respiratory movements likewise decreases lymph and blood flow and thereby prevents dissemination of bacteria and toxins, and also aids in the formation of fibrous tissue. Cessation of motion in the lung, as in other tissues, causes an increase in fibrous tissue growth. Following thoracoplasty fibrous tissue grows from the pleura, and this, with the scar formed by the operation and the fixation of the ribs by bony growth, encapsulates the lung and prevents motion.

Indications for operation are numerous and demand individual consideration in each case. Likewise, numerous contraindications must be considered. The character of the disease, its location, duration, and its behavior and response to treatment should be considered in determining the type of operation. Therefore, no hard and fast rule can be laid down as to what patients are suitable for surgery or what type of operation should be performed. On the other hand, each patient must be selected for the type and extent of surgery to be done.

In general, those patients are the best suited for operation in whom the disease is predominantly unilateral, who have not been cured by rest and sanitarium treatment, and whose lesions are of the fibrous production type with or without cavitation. This last consideration is of the greatest importance since it means that there is already an attempt at healing by fibrous encapsulation.

However, those patients with soft exudative tuberculosis are not as good risks, but if pneumothorax cannot be done because of adhesions, or has not brought about improvement, or where phrenic nerve interruption has not caused marked improvement, then thoracoplasty should be attempted. In any event, some type of collapse should be done before the disease is so far advanced and so extensive and generalized that no treatment is of value. Slight involvement of the "better" lung is probably always present and is not a contraindication to operation. On the other hand, lesions in the "better" lung often show rapid improvement after collapse of the "worse" lung.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

FEBRUARY, 1937

THE NEWER VENEREAL DISEASES

The difficulties which arise in the clinical differentiation of the venereal diseases one from another are reflected in the nomenclature. The terms chancre and chancroid, granuloma inguinale and lymphogranuloma inguinale are not only confusing phonetically, but in the latter two *inguinale* is misleading because the lesions are not confined to the inguinal region. With the exception of gonorrhea the pudendal lesions of the venereal diseases constitute a problem in diagnosis and treatment. Even the question of considering genital fusospirillosis as a venereal disease is debatable. Nevertheless order is developing from confusion because of the scientific approach in the study of these conditions without the necessity of such a heroic experiment as that of John Hunter. While he differentiated between the chancre and chancroid he failed to recognize gonorrhea as a separate entity. Today a similar error is readily made because of the failure of clinicians to recognize that these afflictions may occur alone or in any combination.

The demonstration of the spirochaeta pallida is diagnostic of syphilis but does not rule out other superimposed infections. The preparation of an antigen from a culture of Ducrey's bacillus offers a specific diagnostic test for chancroid. This test is not without its hazards of misinterpretation, because once a victim of chancroidal infection the patient is always a positive reactor. In a similar way a patient once infected with the virus of lymphogranuloma inguinale will always react to the Frei antigen whether the existing lesion is due to that virus or to some other infectious agent. The protean manifestations of this disease are well known; for example, inguinal buboes, rectal strictures, and elephantiasis of the genitals, and the frequent accompanying ulcerations. It is not always easy to demonstrate Donovan bodies in suspected cases of

granuloma inguinale, especially when complicated by other organisms. A knowledge of the specific histopathology facilitates the diagnosis of such cases. It should be borne in mind that genital ulcerations, of whatever nature, are commonly complicated by a superimposed fusospirillosis. It has been shown that it is necessary to treat the fusospirillosis before favorable results can be obtained from remedies directed toward the underlying condition.

The confusion in terminology may soon cease when the more appropriate terms come into general use. Lymphopathia venereum is more descriptive than the unwieldy term lymphogranuloma inguinale. This preference is obvious because lesions are not confined to the groin but may involve the genitals and rectum. Since granuloma inguinale has been observed on the external genitals and cervix of the uterus, granuloma venereum would be a more suitable name. Genital fusospirillosis is preferred to such terms as erosive balanitis and phagedenic ulcer.

Rapid strides are being made in the study and treatment of the newer venereal diseases. Suffice it to name a few of the contributions, some of which have developed in the University of Georgia School of Medicine: *The Diagnostic Frei Test and The Isolation of the Virus in Lymphopathia Venereum; The Demonstration of the Donovan Bodies in Tissue Sections and The Use of Fuadin in Treatment in Granuloma Venereum; The Relatively Simple Method of Cultivation of Ducrey's Bacillus and The Preparation of Bacillary Antigen for Diagnosis in Chancroidal Infection; and The Treatment of Genital Fusospirillosis With Arsphenamine-Cod Liver Oil Mixture.*

It is essential that one should be mindful of the fact that these diseases may occur in any combination or permutation and the interpretation of the various tests taxes the ingenuity of the clinician. In spite of the difficulties, sufficient progress has been made that these diseases may now be recognized and treated intelligently.

EDGAR R. PUND, M.D.

The Association meets in Macon, May 11, 12, 13, 14, 1937.

TRENDS IN NUTRITION

Work and studies in human nutrition are making better headway. Why there seems to have been a lag in this subject for a long period, prior to present times, is hard to understand. Knowledge in plant and animal nutrition has advanced and has received interest and support from diverse agencies, chiefly due to economic reasons of course. The facts and knowledge gained were slow in being applied to human nutrition. The subject is of tremendous importance to human welfare.

Nutrition is the common plank in the platform of all medical specialties. To the obstetrician, nutritional balance of the patient prior to, and during pregnancy and particularly optimum mineral and vitamin factors are vitally necessary. The protective value of high vitamin A storage against puerperal infection, the necessity of high vitamin B to satisfactory lactation, and many other striking facts are obvious in this connection.

The pediatrician is particularly concerned with the newer facts in nutrition. The protection against alimentary anemia, the calcium, phosphorous and vitamin D ratio, the supply of growth factors, and many other important facts the pediatrician is making use of.

To the surgeon a better concept of more adequate nutrition is needed to help him in immediate operative results and the avoidance of postoperative complications. The patient who has a normal glycogen store in both liver and musculature is certainly the most acceptable risk. Balanced nutritional states offer better results where major surgery is required. To the dermatologist abnormal nutrition reflects itself in many ways in the skin, particularly in the food deficiency diseases.

We have made particular progress in the disorders of metabolism. The diabetic for example, is kept in a far more satisfactory nutritional state than in former years. This has lessened the complications of the disease. There are a large group of patients in the prescorbutic, preberiberi, and prepellagrous stages which we are recognizing earlier and efforts are made to restore them to normal nutritional levels.

Plimmer calls attention to the alignment of the factory with food and sounds a warn-

ing. He says: "Cereal foods have suffered most severely since the introduction of machine milling in 1870. The modern machine with its steel rollers removes the bran and germ from the grain so that we eat only the unnutritious core of the seeds of wheat, rice, barley, and maize."

It should not only be a matter of interest but of serious concern to a physician that the hemoglobin values of the average American is considerably lower than that of the average European. And the reason can be easily and accurately traced to inadequate food intake of the mineral and vitamin containing foods. The commercial refinement of the grains and other foodstuffs as exists in this country today tremendously discounts an otherwise adequate diet.

Our conception of nutrition is far more pertinent today. It envisions far more than the question of overweight or underweight. We recognize the hazards of obesity and the necessity of weight control in the metabolic, cardiovascular, and renal diseases, and realize that the better hope of longevity leans decidedly more toward the lighter side of the scales.

JOHN B. FITTS, M.D.

THE CENTENNIAL OF THE UNIVERSITY OF LOUISVILLE MEDICAL SCHOOL

The University of Louisville Medical School is the second oldest medical school now in existence west of the Alleghenies and the oldest Municipal Medical College in the United States. It celebrates its Centennial March 31st to April 3rd, 1937, at Louisville, Ky.

The alumni are urged to make their plans now to attend their alma mater and participate in the celebrations. There is an unexcelled clinical program by outstanding guest speakers. Ward rounds daily at the hospital and lectures in the forenoon and afternoon. There will be numerous scientific exhibits in the various departments of the University. For the visiting ladies unusually interesting entertainment has been provided. There will be motor trips through the beautiful local parks and to the famous bluegrass region. The historic Old Kentucky Home at Bardstown and Lincoln Memorial at Hodgenville are also included in the itinerary. Mammoth Cave is within easy motor-ing distance for those who wish to visit this natural wonder. Lexington and the famous race horse stables are but a short distance from Louisville and in the heart of the bluegrass region.

The alumni will shortly receive advance notices and printed programs of the Centennial Celebrations. They are urged to make their plans now to attend.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

TRENDS IN THE CONTROL OF TUBERCULOSIS

The writer had the pleasure of attending the joint meeting of the Southern Tuberculosis Conference and the Southern Sanatorium Association and was particularly impressed by the practically complete agreement that enough is known of the epidemiology of tuberculosis that it could be stamped out were the measures known to be required be put into effect. It was pointed out that tuberculous infection in dairy cattle was practically eliminated by the simple expedient of slaughtering those found to be tuberculin positive. Such a method, of course, is unthinkable where human beings are concerned, but all human tuberculosis carriers could be effectively controlled in one way or another so that no more people could be infected and the same result would be obtained thereby and mankind would be as effectively protected against tuberculosis as are cattle.

In the tuberculin test we have a means of determining who has been infected. It will prove that in the various sections and cities 10 per cent to perhaps 75 per cent of the population are infected, with perhaps an average of 50 per cent in this State. It would be ideal and not entirely impractical to have everyone tuberculin tested so that each person with a reaction to the test might be studied. It is manifestly impossible to have every reactor x-rayed and it would not be necessary. It is sufficient that only those in certain age groups and that all who have symptoms which may be due to tuberculosis and all who have had familial or household contact be x-rayed.

Tuberculin testing in infants should be encouraged as valuable information as to sources of infection may be obtained, for the younger the child tested the more probable it is that the source of the infection is another member of the family or household.

Most deaths from tuberculosis occur in the 20 to 40 age group and it is before and shortly after 20 that the pulmonary disease is usually first manifest and more amenable to treatment.

For this reason it is advised that students entering high school be tested and every reactor be x-rayed, that all that were negative be tested again in their senior year, the reactors being x-rayed, and that x-rays be repeated at this time, too, on those found to be tuberculin positive in the first year. Since all boys and girls do not attend high school a special effort should be made to reach this

larger group by means of special tuberculin testing clinics. The various industrial groups such as workers in textile, cement and talc mills and factories should be studied since in them will be found many having tuberculosis. Such a case finding program is essential and would assist enormously in wiping out tuberculosis.

The expense of such surveys, even though only a small number of cases are found, is hardly to be considered, for if only a single early case is found, say at a cost of \$200, and given prompt, adequate care to the extent that he may not develop advanced tuberculosis, much will have been saved as the average estimated cost of treating or taking care of the advanced case is \$2,500 to \$3,000. The early case may usually be quickly arrested by a comparatively short rest cure and may be kept arrested by modification of living conditions, habits, etc.

The advanced case presents another problem, however, and one much more difficult to solve. Lack of hospital or sanatorium beds renders it more difficult to obtain adequate treatment.

Frequently persons with advanced tuberculosis will not avail themselves of the opportunity for adequate care when it is offered to them. They will not put into effect the measures which to a large extent would prevent the infection of others and by their failure to cooperate injure themselves and are serious spreaders of tuberculosis in the communities in which they live. To handle such people to the good of all we need laws and facilities for forcing isolation until the cases are closed by treatment resulting in arrest, or by isolation in hospitals, sanatoriums or colonies. At the Conference mentioned above, a resolution was adopted favoring legislation providing for the isolation of tuberculosis carriers.

In 1935, 1,731 deaths from tuberculosis in Georgia were reported, the rate per 100,000 being 57.1, the lowest on record, and it is estimated there are at least five times that number of active cases—that is, 8,655, half of which should be institutionalized or colonized. The remainder could be satisfactorily treated at home.

To locate these cases and to properly treat and control the infected and diseased groups there is needed a greater and more adequate case-finding organization, that is, more field units, trained clinicians, and a larger field nursing service to assist the local physicians in this problem, and more hospital or sana-

torium beds—enough so that no one who cannot be cared for in the home properly and adequately need suffer because of this lack and we need laws tending toward control of the irresponsible, careless tuberculosis carrier. All of the foregoing needs joined with adequate welfare service and the continued interest of the medical profession which has given so lavishly of medical care (usually with no remuneration) would in a few years render tuberculosis in human beings as rare as it is in cattle.

H. C. SCHENCK, M.D., *Chief*
Division of Tuberculosis Control.

BOOK REVIEW

Tissue Immunity, by Reuben L. Kahn. M.S., D.Sc., University of Michigan; pp. 707. Price \$7.50. Springfield, Illinois: Charles C. Thomas, 1936. Any book by Reuben L. Kahn, who has enjoyed for some years an international reputation as a serologist and immunologist, should be of great interest to the medical profession. This particular volume, "Tissue Immunity," merits the thoughtful attention of all, directly or indirectly concerned with practical and theoretical problems of immunity. It will appeal especially to the allergist, bacteriologist, biologist, bio-chemist, pathologist, physiologist and also to the expert clinician. Furthermore, the teacher of immunity will find extensive protocols of laboratory experiments, outlined so lucidly and in such detail that they can be utilized easily for classroom instruction in the principles of tissue immunity.

Kahn begins with the concept that immunity is a fundamental, evolutionary, physiologic property of all cells. In a logical, orderly manner he develops this theory from numerous laboratory experiments until a simple interpretation is found for many obscure phenomena that were formerly classified as humoral or cellular reactions of the organism. This broad biologic view enables him to explain in an original manner such things as why certain bacteria are less harmful in the skin and more harmful in the blood stream, why too many injections of an antigen may lead to "immunologic fatigue," why injected proteins in allergic individuals bring about "disimmunization," why care should be exercised in choosing the site of injection, why vaccinations for smallpox in non-immunes show a delayed necrosis, why some individuals are hyper-immune and others hypo-immune. Often the terminology is colorful, such as one particularly descriptive phrase recurring throughout the text, "the anchoring power or capability" of different tissues.

The facts and theories offered are based entirely on the author's own research, the numerous references to other workers' findings being incidental rather than critical. Each chapter is well outlined at the beginning, the experimental results are summarized at the end and applied and interpreted in relation to practical clinical experiences which the practising physician meets in the field of preventive medicine. Two chapters at the end of the book summarize again, one from the theoretical viewpoint and the other from the stand-

point of practical applications to various diseases. These summaries are a help to the casual reader, but make the book seem over-burdened with repetition for the more critical. The faults are few, most of them being minor, such as the use of old nomenclature for bacterial organisms, the misspelling of Guerin in writing of B.C.G. and an occasional clumsy sentence.

In the final analysis the book is essentially Kahn's ideas on Tissue Immunity. Sometimes in agreement with the findings of other immunologists, sometimes divergent, but in any case, it is stimulating and without doubt, a most valuable contribution to immunology in particular, and to medicine in general.

ROY R. KRACKE, M.D.
ELIZABETH GAMBRELL.

COUNTIES REPORTING FOR 1937

Houston County Medical Society

The Houston County Medical Society announces the following officers for 1937:

President—J. W. Story, Perry.
Vice-President—H. E. Evans, Perry.
Secretary-Treasurer—R. L. Cater, Perry.

Jackson-Barrow Counties Medical Society

The Jackson-Barrow Counties Medical Society announces the following officers for 1937:

President—W. T. Randolph, Winder.
Vice-President—Oliver Pittman, Commerce.
Secretary-Treasurer—C. B. Lord, Jefferson.
Censors—S. T. Ross, L. C. Allen and Laetus Sanders.

Habersham County Medical Society

The Habersham County Medical Society announces the following officers for 1937:

President—Horace E. Crow, Alto.
Vice-President—D. T. Rankin, Alto.
Secretary-Treasurer—David H. Garrison, Clarksville.
Delegate—Wm. H. Garrison, Clarksville.
Alternate Delegate—B. J. Roberts, Cornelia.

Wayne County Medical Society

The Wayne County Medical Society announces the following officers for 1937:

President—T. G. Ritch, Jesup.
Vice-President—J. T. Colvin, Jesup.
Secretary-Treasurer—A. J. Gordon, Jesup.

Clayton-Fayette Counties Medical Society

The Clayton-Fayette Counties Medical Society announces the following officers for 1937:

President—J. R. Wallis, Lovejoy.
Vice-President—H. D. Kemper, Jonesboro.
Secretary-Treasurer—T. J. Busey, Fayetteville.
Delegate—T. J. Busey, Fayetteville.

Burke County Medical Society

The Burke County Medical Society announces the following officers for 1937:

President—W. R. Lowe, Midville.
Vice-President—W. W. Hillis, Sardis.
Secretary-Treasurer—E. A. Barger, Waynesboro.
Delegate—J. M. Byne, Jr., Waynesboro.
Alternate Delegate—W. C. McCarver, Vidette.

Franklin County Medical Society

The Franklin County Medical Society announces the following officers for 1937:

President—Stewart D. Brown, Royston.

Secretary-Treasurer—B. T. Smith, Carnesville.

Crisp County Medical Society

The Crisp County Medical Society announces the following officers for 1937:

President—A. J. Whelchel, Cordele.

Vice-President—Charlie Adams, Cordele.

Secretary-Treasurer—L. O. Wooten, Cordele.

Delegate—H. J. Williams, Cordele.

Alternate Delegate—Charlie Adams, Cordele.

Censors—C. E. McArthur and M. R. Smith.

Wilkes County Medical Society

The Wilkes County Medical Society announces the following officers for 1937:

President—C. E. Wills, Washington.

Vice-President—H. M. Sale, Sharon.

Secretary-Treasurer—A. W. Simpson, Washington.

Delegate—O. S. Wood, Washington.

Alternate Delegate—L. R. Casteel, Metasville.

Censors—H. T. Harriss and H. M. Sale.

Jenkins County Medical Society

The Jenkins County Medical Society announces the following officers for 1937:

President—H. G. Lee, Millen.

Vice-President—Q. A. Mulkey, Millen.

Secretary-Treasurer—Cleveland Thompson, Millen.

Delegate—Q. A. Mulkey, Millen.

Alternate Delegate—Cleveland Thompson, Millen.

NEWS ITEMS

DR. D. C. KELLEY, Lawrenceville, has been elected President of the First National Bank of Lawrenceville.

DR. SAMUEL F. ROSEN, Savannah, has been elected to fellowship in the American College of Physicians.

THE FOLLOWING PHYSICIANS of Valdosta volunteered their services and did an innumerable amount of charity work for the Child Welfare Clinic held recently in Valdosta: Dr. Alton M. Johnson, Dr. J. F. Mixson, Dr. J. F. Mixson, Jr., Dr. T. C. Williams, Dr. Frank H. Thomas, Dr. J. M. Smith, Dr. T. M. Smith, Dr. Albert F. Saunders, Dr. Frank Bird, Dr. A. G. Little, Dr. B. G. Owens, Dr. P. C. Quarterman and Dr. J. A. Thomas.

THE COLEMAN SANATORIUM, Eastman, announces the employment of Miss Matilda Otwell, laboratory and x-ray technician. She graduated from Emory University. Dr. Warren A. Coleman is Medical Director.

PHYSICIANS OF COLUMBUS who have been selected to serve on the staff of the proposed Community Hospital in Phenix City, Ala., which is just across the Chattahoochee River from Columbus, are: Dr. Arthur N. Berry, Dr. J. H. Mathews, Dr. O. C. Brannen, Dr. B. B. Hudson, Dr. C. D. Johnson, Dr. John W. Mayher, Dr. G. S. Murray, Dr. W. Edward Storey, Dr. J. A. Thrash, Dr. J. H. Johnson, Dr. G. J. Dillard, Dr. W. L. Cooke, Dr. Bert Tillery, Dr. A. N. Dykes, Dr. O. D. Gilliam, Dr. Wm. E. Mayher, Dr. J. L. Spikes, Dr. J. L. Stapleton, Dr. John Bush, Dr. R. F.

Johnson, Dr. C. Amory Dexter, Dr. J. H. Gaston, Dr. F. L. Cosby, Jr., Dr. J. N. Willis, Dr. Bruce Threatte, Dr. J. H. McDuffie, Dr. J. C. Woolridge, Dr. J. R. Youmans, Dr. W. P. Jordan, Dr. J. D. Mahaney, Dr. Francis B. Blackmar, Dr. John H. Winn, Dr. Mercer Blanchard, Dr. Wm. C. Cook, Dr. Frank B. Schley, Dr. W. R. Jones, and Dr. Frank P. Norman.

DR. W. C. HUMPHRIES, Griffin, Spalding County Commissioner of Health, in cooperation with Dr. H. C. Schenck, State Board of Health, held a tuberculosis clinic at the City Hall, Griffin, on January 8th.

THE SOUTH GEORGIA MEDICAL SOCIETY, composed of the counties of Berrien, Clinch, Cook, Echols, Lanier and Lowndes, met at the Daniel Ashley Hotel, Valdosta, on January 5th. Officers were elected for the ensuing year and plans made for regular scientific meetings to be held. Dr. P. H. Askew, Jr., Nashville, entertained the members in Adel at the February meeting.

DR. THOS. BOLLING GAY, Atlanta, has been elected Chairman of the Fulton County Board of Health.

DR. LEWIS BEASON, formerly of Butler, has moved to Fort Gaines. The Butler Herald with other compliments states: "Dr. Beason is one of the State's best physicians and a gentleman of unusual intellect and personal attainments; and his family a most excellent one."

FOR INFORMATION in reference to an excellent location for a physician, write the Secretary-Treasurer.

MR. H. Y. MCCORD, Atlanta, presented to Emory University School of Medicine a portrait of Dr. Alexander Means, who was Professor of Chemistry in the Atlanta Medical College, and one time President of Emory College. Dr. Russell H. Oppenheimer accepted the portrait in behalf of the School and among other things said: "The lives of untiring interest and effort of men such as Dr. Means in behalf of the School have formed the traditions which have kept others at work and brought the school its present place, and given us inspiration to carry on."

DR. SAMUEL KAHN, Atlanta, was one of the speakers on Radio Station WGST on January 12th. He spoke on *The Importance of Vocational Guidance to Business*.

THE STAFF MEETING of the Crawford W. Long Memorial Hospital, Atlanta, was held on January 14th. Dr. L. C. Fischer presented a patient with *Carbuncle and Discussed Treatment*. Officers were elected.

DR. H. R. PERKINS, formerly of Rockmart, has been employed by the State Board of Health in county health work.

DR. DIXON FOWLER announces the opening of his office in Suite 1203 Medical Arts Building, Atlanta, for the practice of pediatrics.

THE FOURTH DISTRICT MEDICAL SOCIETY met at the Elks Club in Griffin on February 10th. Titles of

papers on the scientific program were: *External Diseases of the Eye and Their Treatment* by Dr. Zack W. Jackson, Atlanta; *The Injection Treatment of Hemorrhoids and What Not to Do*, Dr. Hulett H. Askew, Atlanta; *Colloidal Sulphur in Arthritis*, Dr. H. C. Sauls, Atlanta; *Difficult Labor*, Dr. C. B. Upshaw, Atlanta; others reported cases.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on January 26th. Dr. Leonard J. Hane read a paper entitled *Infusions*, discussed by Dr. J. C. Metts. Dr. L. W. Williams reported a case, *Unusual Ovarian Development with Excessive Menstruation*. Refreshments were served.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on January 26th. Dr. I. W. Moorman, Douglas, read a paper entitled *Obstetrics*, discussed by Dr. H. J. Goodwin, Douglas. Dr. J. W. Wallace, President, assigned subjects for different members of the Society to discuss at the meetings for the first half of the year. Subjects from current literature will be abstracted for the meetings.

DR. BOMAR A. OLDS AND DR. LESTER A. BROWN announce their association in the practice of disease of the ear, nose and throat. Offices are in Suite 310 of the Medical Arts Building, Atlanta.

THE WALKER-CATOOSA COUNTIES MEDICAL SOCIETY met at the office of Dr. Charles W. Stephenson, Ringgold, on January 4th. Dr. S. B. Kitchens, LaFayette, read a paper on *Simple Practical Laboratory Procedures*, discussed by Dr. Franklin B. Bogart, Chattanooga, Tenn. Dr. Fay Murphy, Jr., Chattanooga, read a paper on *Modern Treatment of Pneumonia*. Dr. J. H. Hammond, LaFayette, spoke on the *Treatment of Pneumonia When He Began Practice Fifty-six Years Ago*.

DR. THOMAS E. VICKERS, Harrison, celebrated his 73rd birthday on January 10th. He has been one of the loyal members of the Association and a charter member of the Washington County Medical Society. Among other things the Sandersville Progress writes: "Dr. Vickers is one of the leading physicians of this section. He has practiced medicine for 52 years, which is a remarkable fact in the history of the State, as very few physicians in Georgia have such a record. It is true of every doctor worthy of his profession that much of his skill is spent on charity. This is true of Dr. Vickers in a notable degree, as he has given of his skill, his strength, his wealth and still devoting himself with tireless zeal to the service of humanity. No night so black with impending storm as to keep him at home when there is a call to relieve suffering, no matter if the patient is a 'prince or pauper.' "

THE STAFF MEETING of Emory University Hospital was held on February 1st. The program consisted of discussions on: *Post Pharyngeal Abscesses* by Dr. Edward S. Wright; *Surgical Treatment of Prostatism*, Dr. M. K. Bailey. Others to discuss cases were Dr. Earl Floyd, Dr. Jas. L. Pittman and Dr. Chas. A. Eberhart; *Dissecting Aneurysm*, Dr. L. Minor Blackford, Dr. Eustace A. Allen and Dr. Edgar D. Shanks; *Case for Diagnosis and Treatment*, Dr. C. W.

Strickler, Jr., Dr. M. K. Bailey and Dr. F. G. Hodgson.

THE WARE COUNTY MEDICAL SOCIETY met at the Woman's Club Room in Homerville on February 3rd. Dr. H. G. Huey, Homerville, was host. The scientific program consisted of discussions of clinical cases.

THE GEORGIA BAPTIST HOSPITAL STAFF held its annual meeting on January 19th. Officers elected for the ensuing year were: Dr. W. S. Dorough, President of the Staff; Dr. Olin S. Cofer, First Vice-President; Dr. Stephen T. Brown, Second Vice-President; Dr. Thomas P. Goodwyn, Secretary.

THE AUGUSTA-RICHMOND ANTI-TUBERCULOSIS ASSOCIATION held its annual meeting on January 20th. Dr. Eugene E. Murphey, Augusta, was re-elected President.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met at Winder on January 11th.

THE SPALDING COUNTY MEDICAL SOCIETY met at the Strickland Memorial Hospital, Griffin, on January 19th. Dr. J. K. Fancher, Atlanta, spoke on the *Recent Advancement in Endocrinology*.

THE BULLOCH - CANDLER - EVANS COUNTIES MEDICAL SOCIETY met at Statesboro on January 13th. Officers were elected for the ensuing year. Luncheon was served.

DR. W. H. PERKINSON, Marietta, has been re-elected Chairman of the Marietta Board of Education.

THE ANNUAL STOCKHOLDERS MEETING of the Marietta Hospital, Marietta, was held on January 21st. The stockholders unanimously voted to add new and modern equipment in the hospital. New Board of Directors elected were: Dr. G. O. Allen, Dr. C. D. Elder, Dr. A. H. Fowler, Dr. R. W. Fowler, Dr. M. M. Hagood, Dr. Geo. F. Hagood, Dr. W. M. Gober, Dr. L. L. Welch, Dr. W. H. Perkinson and Dr. Robert Fowler, all of Marietta; and Dr. J. W. Ellis, Kennesaw.

SOUTHEASTERN SURGICAL CONGRESS NEXT ASSEMBLY AT CHARLOTTE

The Southeastern Surgical Congress announces the Eighth Annual Assembly of the Congress to be held in Charlotte, N. C., March 8, 9, and 10, 1937, with headquarters at the Charlotte Hotel. This Assembly will in all probability be the most outstanding surgical meeting ever held in the South.

Thirty-five of the country's most outstanding surgeons, representing each branch of surgery, have already been placed on the program. There will be three full days of postgraduate lectures and one public meeting at which time the C. Jeff Miller Lectureship will be given. This lectureship will be the high point of the Assembly. Its purpose is to honor the late Doctor C. Jeff Miller of New Orleans. It was founded to commemorate the memory of Doctor Miller as a great surgeon and public benefactor. This Memorial Lectureship will bring together in one evening such

men as Dr. W. D. Haggard, who is one of the world's greatest surgical orators and who will present the Memorial address; Dr. Frederic A. Beasley, President of the American College of Surgeons; Dr. Charles Gordon Heyd, President of the American Medical Association; Dr. J. H. J. Upham, President-Elect of the American Medical Association; Dr. Frank Boland, President of the Southern Medical Association, and Dr. Fred Rankin, President-Elect of the Southeastern Surgical Congress and President of the Southern Surgical Association. These surgeons will all give talks on this occasion.

On Tuesday evening the regular annual banquet will be given in the Ballroom of the Charlotte Hotel. Each day at the noon hour a round table conference will be held and at this time questions on lectures delivered previously may be asked the speakers. Everyone is invited to ask questions and to enter into the discussions.

Programs will be mailed out about February 15th.

Below is a list of the speakers who will take part in the program:

Abell, Irvin, Louisville, Ky.
 Babcock, W. Wayne, Philadelphia.
 Beasley, Frederic A., Waukegan, Ill.
 Blackburn, John H., Bowling Green, Ky.
 Boland, Frank K., Atlanta, Ga.
 Bunch, George H., Columbia, S. C.
 Churchill, Edward D., Boston, Mass.
 Conwell, H. Earle, Birmingham, Ala.
 Craig, Winchell McK., Rochester, Minn.
 Crile, George W., Cleveland, Ohio
 Dicks, J. W. D., Natchez, Miss.
 Gage, Mims, New Orleans, La.
 Gaul, J. S., Charlotte, N. C.
 Haggard, W. D., Nashville, Tenn.
 Herrmann, Louis G., Cincinnati, Ohio
 Hertzler, Arthur, Kansas City, Mo.
 Heyd, Charles Gordon, New York City
 Horsley, J. Shelton, Richmond, Va.
 Jelks, Edward, Jacksonville, Fla.
 Kretschmer, Herman, Chicago, Ill.
 Lehman, Edwin P., University, Va.
 Lewis, Dean, Baltimore, Md.
 Lowsley, O. S., New York City
 Lucas, Charles DeF., Charlotte, N. C.
 Meeker, W. R., Mobile, Ala.
 Mitchell, Edward D., Memphis, Tenn.
 Novak, Emil, Baltimore, Md.
 Pruitt, Marion, Atlanta, Ga.
 Rawls, Julian, Norfolk, Va.
 Rush, L. H., Meridian, Miss.
 Semken, George H., New York City
 Speed, J. S., Memphis, Tenn.
 Spurling, Glen, Louisville, Ky.
 Upham, J. H. J., Columbus, Ohio
 Weiland, Arthur H., Coral Gables, Fla.

For information write or wire Dr. B. T. Beasley, Secretary-Treasurer, 701 Hurt Building, Atlanta, Ga.

OBITUARY

Dr. Daniel H. Weeks, Nicholls; member, University of Georgia School of Medicine, Augusta, 1900; aged 62; died at his home after a short illness on Jan-

uary 5, 1937. He was a prominent physician and held in high esteem by hundreds of people. Dr. Weeks served as representative of Coffee county in the General Assembly of Georgia, on the Coffee County Board of Education and as Mayor of Nicholls. He took an active interest in the practice of medicine and medical organizations, civic and religious affairs. Dr. Weeks was a member of the Elk's Club and Masonic Lodge. Surviving him are his widow, three daughters: Mrs. M. D. Eich, Knoxville, Tenn.; Mrs. R. R. Cook, Fitzgerald; Miss Grace Weeks, Nicholls; two sons, Daniel W. Weeks, Nicholls, and A. P. Weeks, Athens. Funeral services were conducted at Elon church near his home. Burial was in the churchyard.

Dr. John Jackson Johnson, Calhoun; Emory University School of Medicine, Emory University, 1932; aged 30; died at a private hospital in Atlanta from injuries received in an automobile accident on January 9, 1937. He married Miss Elizabeth Sloan, Atlanta, just a few hours before the accident occurred. Dr. Johnson was born and reared at Cartersville. After receiving his degree in medicine, he served as an intern at Grady Hospital and Steiner Clinic; then engaged by the government for more than two years in Oklahoma and Illinois with the Veterans' Administration Facility. Dr. Johnson had planned to be associated with Dr. Harry W. Ridley, Atlanta, in the practice of medicine. Surviving him are his widow, father and mother, Mr. and Mrs. Jesse L. Johnson, Calhoun; one sister, Miss Mary Johnson, Calhoun. Funeral services were conducted from the First Baptist Church of Calhoun. Burial was in the Fain cemetery.

Dr. Lee Bird, Rock Springs, Chattanooga Medical College, Chattanooga, Tenn., 1902; aged 61; died at his home on January 11, 1937 after a long illness. He had resided in the community where he died practically all of his life, except for a few years he practiced at Hiram, Arkansas. Dr. Bird was a member of Rock Springs Methodist Church. Surviving him are his widow, two daughters, Mrs. Edward Lipscomb, Savannah, and Mrs. Ettie Leath, Rock Springs. Funeral services were conducted by Rev. Z. V. Hawks from the Rock Springs Methodist Church. Burial was in the churchyard.

Dr. Leon Colquitt Ward, Damascus; member; Atlanta Medical College, 1898; age 61. Died at a private hospital in Bainbridge on January 31, 1937. He was born at Douglasville, Ga., February 6, 1876. Dr. Ward was a Mason and a member of the Baptist Church and was active in the practice of medicine at Damascus for 35 years. Surviving him are four sisters: Mrs. Logan Clarke, Atlanta; Mrs. J. L. Weddington, Hendersonville, N. C.; Mrs. Eula Peterson and Mrs. M. C. Hanna, Saulsbury, N. C. Funeral services were conducted by Rev. David Cripps. Honorary pallbearers included Dr. J. S. Beard, Edison; Dr. W. C. Hays and Dr. W. H. Houston, Colquitt; Dr. W. O. Shepard, Bluffton; Dr. J. G. Standifer and Dr. G. O. Gunter, Blakely, and members of the Tri-County Medical Society. Interment with Masonic honors was in Damascus cemetery with Damascus Lodge No. 263 in charge, assisted by officers of Magnolia Lodge No. 86, of Blakely.

ACTION OF EPINEPHRINE ON THE DISEASED HUMAN EYE*

Use of the Stronger Solutions for Instillation

STACY C. HOWELL, M.D.
Atlanta

A review of the voluminous literature on epinephrine and the glaucomans indicates that their greatest field of usefulness is probably in the treatment of glaucoma simplex. Sometimes when the tension in the glaucomatous eye cannot be maintained at a sufficiently low level with the customary miotics, this may be accomplished with epinephrine.

In secondary glaucoma the results with epinephrine are in general not so satisfactory as in glaucoma simplex, but even in the former condition a most gratifying response may occasionally be obtained. The beneficial influence is shown by a reduction in the tension, with relief of pain, and by freeing of synechiae when these are present.

In eleven cases of plastic iritis, posterior synechiae were freed by epinephrine after the energetic use of atropine had been ineffective. A 2 per cent solution of epinephrine bitartrate was instilled four times at ten minute intervals. In seven of the cases all synechiae were broken up within one hour and in three within forty-eight hours; in the remaining case it required three instillations over a period of seventy-two hours before the iris was completely free.

When glaucoma is complicated by central cataract, miotics may not be desirable. Although they reduce the pressure, they constrict the pupil and further impair vision. Epinephrine, on the other hand, not only may reduce the tension but improves vision by reason of the mydriasis.

The application of epinephrine to the eye may be followed rarely by an initial rise in tension. Such rise in tension may continue for sufficient time and produce enough pain and pathologic change in the eye to necessitate surgical intervention. I believe the small number of such cases outweigh the great benefit obtained in others.

Summary

Epinephrine bitartrate applied topically to the con-

junctiva is a most helpful therapeutic agent for a number of diseases of the eye. Not infrequently a condition may be successfully managed by its use when other customary measures are ineffective.

Many patients with chronic simple glaucoma, especially those for whom surgical intervention is inadvisable, are made comfortable by the regular application of epinephrine bitartrate, which reduces the intraocular tension to a more nearly normal level. When epinephrine is employed in conjunction with miotics, the action of the latter is often enhanced.

In cases of glaucoma complicated by central cataract, the vision may be greatly improved because of the mydriasis resulting from the instillation of epinephrine.

Since the pupil remains dilated even after the anterior chamber is opened, epinephrine is preferred by some ophthalmologists to atropine as a mydriatic for use in operations for cataract.

Good results are sometimes observed in cases of secondary glaucoma, and the use of the drug should be considered when other drugs have failed to control the pressure.

Because of its strong mydriatic action, epinephrine is an efficient preparation for freeing synechiae in iritis.

Topical application of epinephrine produces fewer disagreeable by-effects than subconjunctival injection. The complication of sustained rise in tension following its instillation usually requires surgical treatment.

*Abstract: Arch. Ophth. 16:1018 (Dec.) 1936.

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THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., March, 1937

Number 3

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS*

A Statistical Study of 140 Cases

R. C. MCGAHEE, M.D.
Augusta

This is a statistical study of 140 infants suffering with congenital hypertrophic pyloric stenosis treated in the St. Louis Children's Hospital from 1916 to Jan. 1, 1933. Special emphasis is placed on the type of treatment used and the results obtained. It is to be borne in mind that these were hospital patients and no claim is made that results in private practice should necessarily be the same. These patients evidently represent the most pronounced instances of this condition in the community. Although this study was undertaken primarily to correlate methods of treatment and results, certain other data were gathered at the same time. There is found the usual accepted preponderance of males, being 78.5 per cent. In 2.2 per cent sex could not be obtained from data given on the charts, otherwise 80 per cent males would possibly be more nearly correct.

Males—110 or 78.5 per cent

Females—27 or 19.3 per cent

Sex not stated—3 or 2.2 per cent

Ninety-six and four tenths per cent were white, 2.1 per cent were negroes and in 1.5 per cent the race was not stated. The Negro patients represent 0.14 per cent of the total Negro hospital population while the whites represent 0.36 per cent or a percentage instance more than two and one-half times as great as that for Negro patients.

White—135 or 96.4 per cent

Negro—3 or 2.1 per cent

Race not stated—2 or 1.5 per cent

Age of Patients at Onset of Symptoms

The third week of life is usually given as

the most common time of the onset of symptoms of congenital pyloric stenosis. The same is found true in this series. The number having their onset in the first and second weeks, however, is only slightly less than the third week, being 17, 21 and 23 per cent respectively. From this time on there is a rapid decline in incidence until the seventh week, after which the condition is uncommon.

Incidence By Year and Month

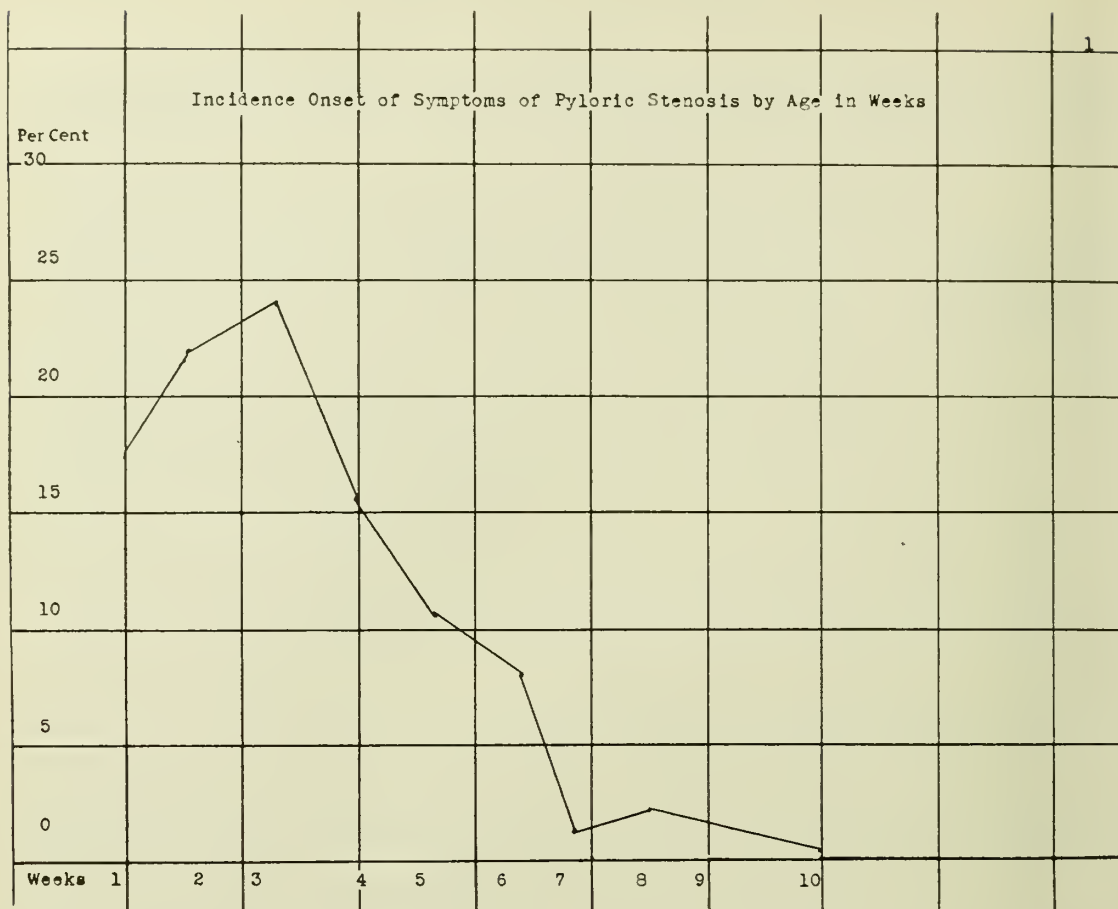
No marked difference was noted in the monthly incidence of patients admitted with stenosis. From the graph it will be seen that March, with an incidence of 19 per cent, was slightly higher than any other month and that the first two-thirds of the year was somewhat higher than the last one-third. The incidence by years shows wide variations from three to eighteen patients. This part of the study becomes instructive, however, as one determines what per cent of the hospital population these patients make up from year to year. In other words, is the condition on the increase? An increase of 29 per cent was found. Possibly this was due in part to more accurate diagnosis of the condition, but not very likely. Also this increase in incidence may be due to the increasing popularity of the hospital as the place to treat stenosis.

Treatment and Results

For purposes of study the treatment has been considered under three headings: (a) Medical (or more correctly, non-surgical); (b) Medical and surgical, and (c) Surgical only.

By medical treatment reference is made to that group of patients who were treated by the usually accepted non-surgical means including such measures as thick feeding, gastric lavage, refeeding and the use of atropin and sedatives. As might be suspected the adequacy of treatment before admission varied a great deal. Furthermore, many of

*Read before the Medical Association of Georgia, Savannah, April 24, 1936.



these patients were brought into the hospital presenting the picture of starvation and dehydration of a marked degree. Some of these, especially in the earlier years of this series were not operated upon because they were such poor surgical risks. In more recent years many more of these athreptic babies were given fluids parenterally, blood transfusions and treated surgically with results that justified this method of treatment.

Patients Treated Non-Surgically

Number of cases—26 or 18.5 per cent

Improved—11 or 42.3 per cent

*Not improved—5 or 15.4 per cent

**Died—10 or 38.4 per cent

*3 Discharged "under protest"

1 "in 30 days, still vomiting"

1 "discharged on 1st day, untreated"

**Cause of death:

1 Septicemia

2 Athrepsia and acidosis

5 Athrepsia

1 Athrepsia and bronchopneumonia

1 Athrepsia and rectovaginal fistula

This series of medically treated patients included three who were in the hospital only

one day before death. It also included five others who were discharged from the hospital as not improved. Three of these left "against the advice of physicians," one after being in 30 days and was "still vomiting" and one was discharged on first day with a notation "operation indicated."

Twenty-six or 18.5 per cent of the total group were medically or non-surgically treated. Of this number ten or 38.4 per cent died. The cause of death was given as athrepsia or starvation in all except one who had septicemia.

The five patients who were discharged as "not improved" and the ten who died represent 57.5 per cent of the non-surgically treated group. Eleven of the patients were discharged as "improved."

Medically and Surgically Treated Group

Number of patients treated—45 or 32.1 per cent

Improved—41 or 91.2 per cent

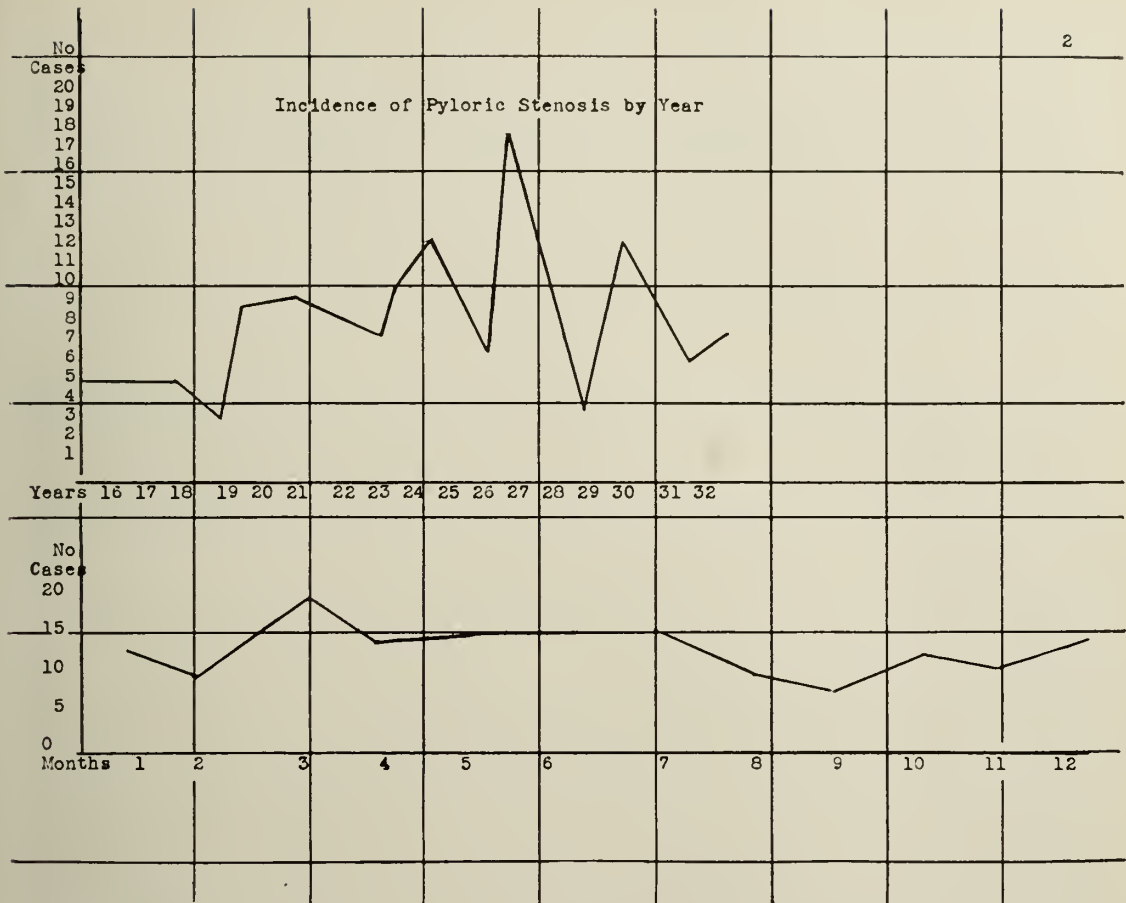
Died—4 or 8.8 per cent

Cause of death:

3 Athrepsia

1 Peritonitis and pyelitis

This group includes those patients who



were first treated medically and in whom the results were unsatisfactory and for that reason operation was resorted to later. There were forty-five patients in this group or 32.1 per cent of the whole. Four patients or 8.8 per cent died, the cause of death being starvation in three and general peritonitis from a perforated duodenum and pyelitis in the other; forty-one patients or 91.2 per cent were "improved."

Surgically Treated Group

Number of patients—69 or 49.3 per cent

Improved—60 or 87.0 per cent

Died—9 or 13.0 per cent

Cause of death:

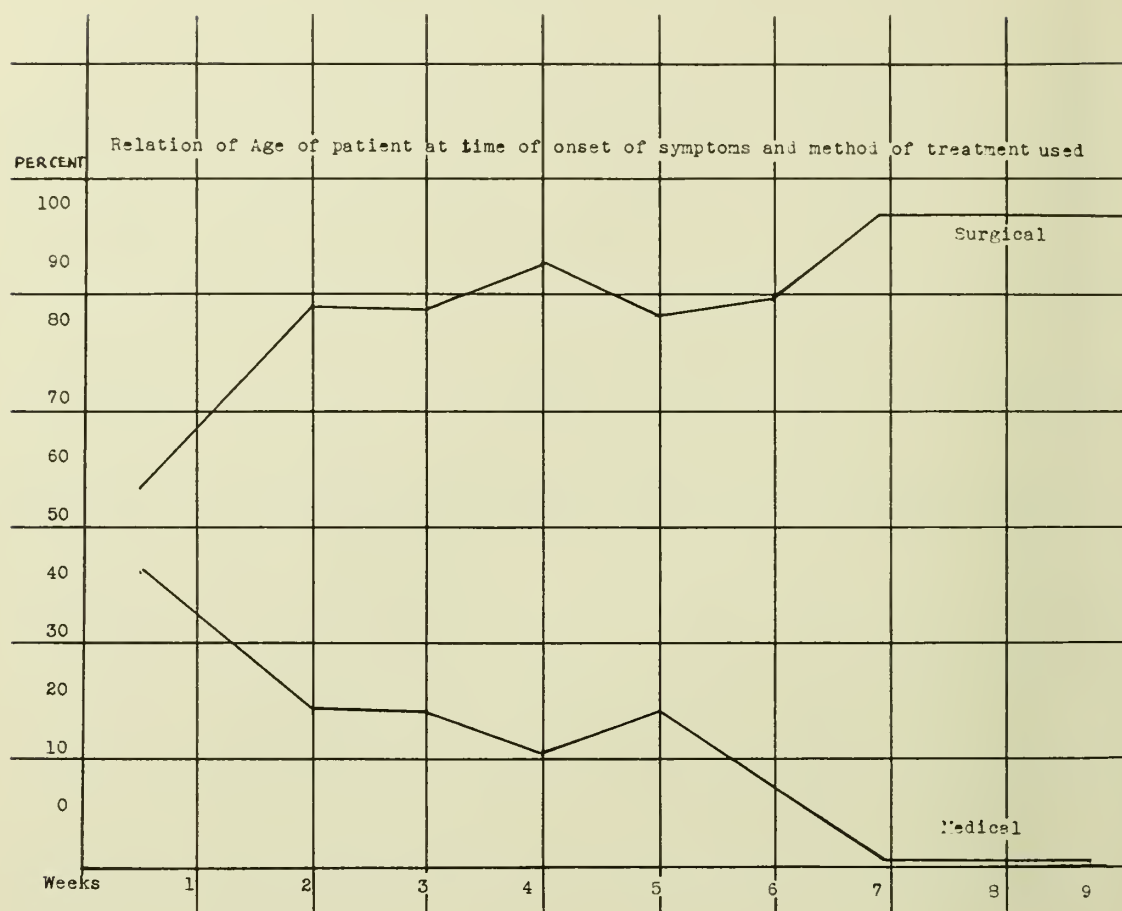
- 2 Athrepsia
- 3 Peritonitis
- 1 Bronchopneumonia and acidosis
- 1 Athrepsia and bronchopneumonia
- 1 Bronchopneumonia, athrepsia and alkalosis
- 1 Athrepsia and peritonitis

This group includes those patients who were operated upon without any preliminary medical treatment except such measures as were necessary to prepare the patient immediately before operation. The operation in all cases was that of Fredet and Ramm-

stedt.¹ In this group there were nine deaths or a mortality of 13 per cent. Here again athrepsia or starvation was the most common cause of death. This was often associated with other conditions, such as pneumonia and occasionally peritonitis. Three died of peritonitis. Sixty or 87 per cent of the patients in this group were "improved."

One hundred fourteen or 81.4 per cent of the patients in this series were finally operated upon. Of these thirteen or 11.4 per cent died, and 101 or 88.6 per cent were "improved." Of those treated non-surgically only 42.3 per cent were "improved" and 57.6 per cent either did not improve or died.

Other factors of interest were found in this study. One was that the period of life when symptoms began bore a definite relationship to the type of treatment used. The earlier in life the symptoms began the higher the incidence of medical treatment, being 40 per cent in the first week of life and falling gradually to the seventh week when all patients having their onset were operated upon. At the present time, however, a mortality of 26 per cent



occurred in those whose symptoms began at one week of life, and all the patients whose symptoms began at seven weeks lived.

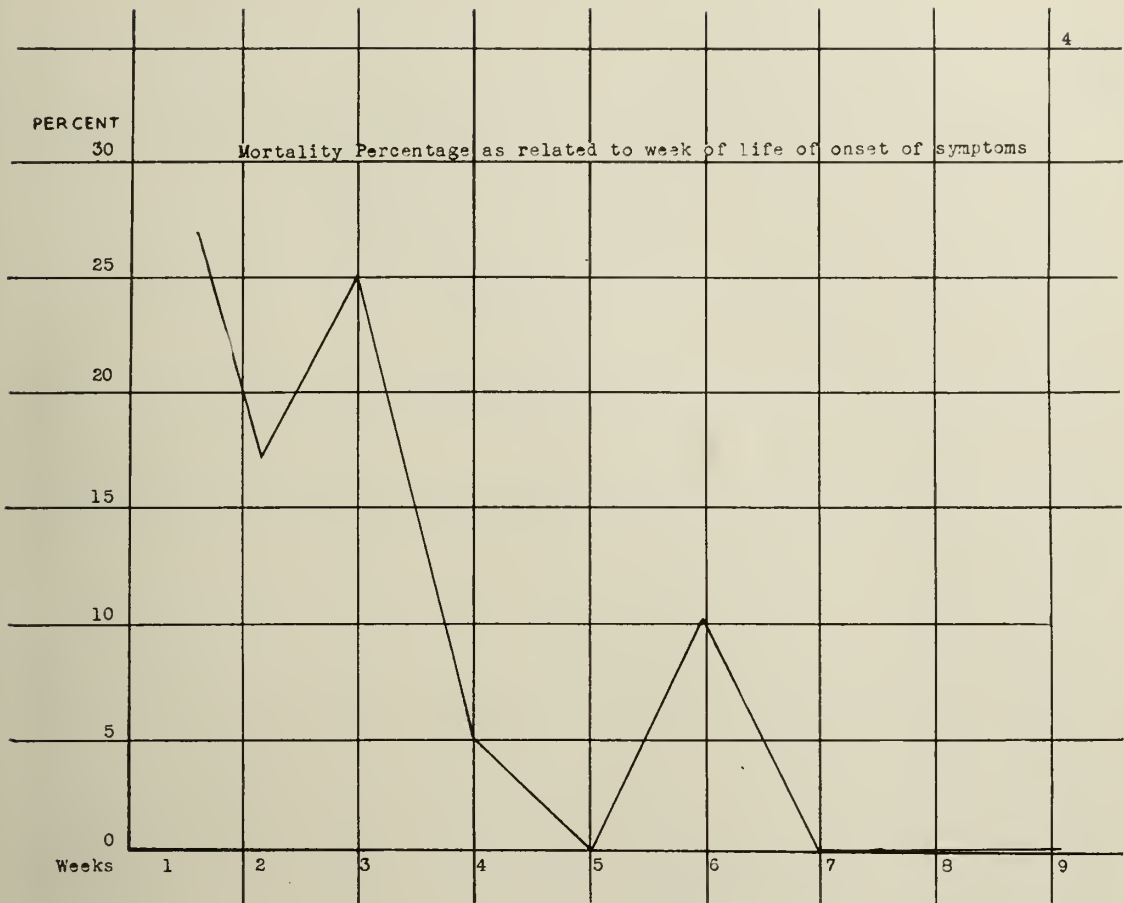
When one compares the graphs of mortality during the different weeks of life and the method of treatment used during the same period, a strikingly close relationship seems to exist. As the percentage incidence of patients operated upon rises, the mortality figure falls in a manner that defies it being a coincidence.

Another study was made to show any relationship existing between mortality and the length of time the symptoms had existed before the operation was performed. This was more or less arbitrarily divided into four periods as follows: (1) Those operated upon during the first week of symptoms, (2) those operated upon during the second and third weeks, (3) those operated upon during the fourth, fifth and sixth weeks and (4) those operated upon after the sixth week. The results show a steady rise from no mortality in the first period to a 20 per cent mortality in the fourth period.

After it had been determined that a higher and higher percentage of these patients were being subjected to operation as the years went by it was of interest to note what effect this was having on the mortality figure. Therefore, a graph was made showing the percentage of patients operated upon and the mortality figure for the same year. With a few exceptions there is a very close relationship showing a fall in mortality as the percentage of patients operated upon rises. Another factor in reducing the mortality, in later years, has been better preoperative preparation of the patients, improved technic and skill and better postoperative care.

Complications

Dr. Zahorsky² called attention to the frequent occurrence of diarrhea in these patients following operation. A likely explanation of this phenomenon is that in the presence of stenosis much of the acid gastric juice is lost in the vomitus, but at the same time the pancreatic juice continues to flow. This makes the duodenum and upper jejunum alkaline and favors the growth of the colon bacillus.



As long as little or no food passes through the stomach for the organisms to grow on, little in the way of diarrhea is seen. However, after operation, when food enters the small bowel fermentation of the carbohydrate takes place producing diarrhea. In this series 25 per cent of the patients developed loose or frequent stools following operation but none assumed serious proportions and usually were over in three to four days.

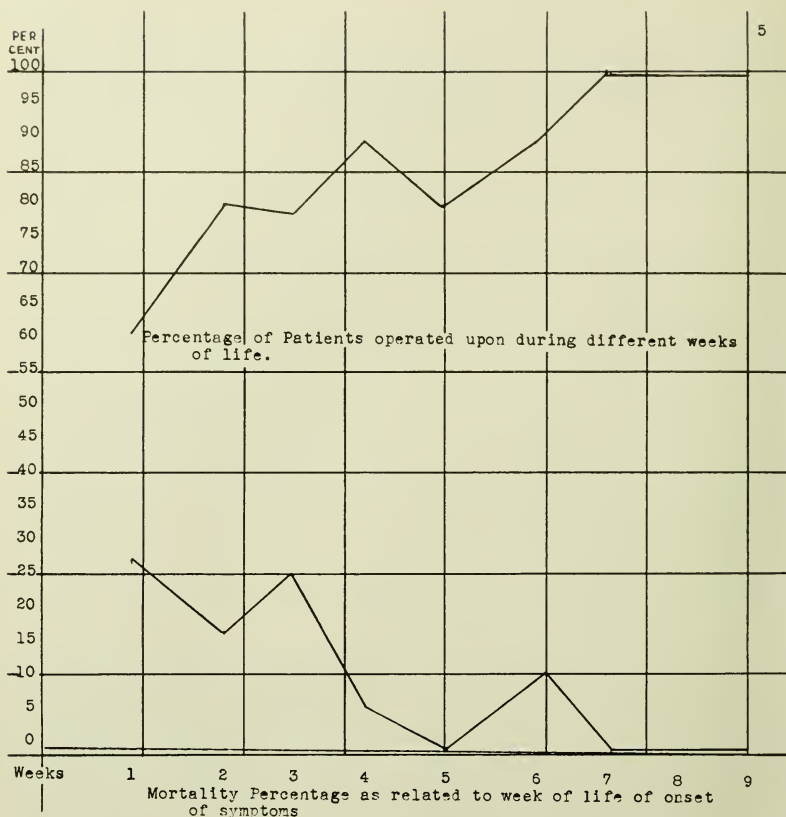
Due to starvation, vomiting and dehydration accompanying this condition one should expect profound chemical changes to take place in the body, especially in disturbance of the acid:base balance. Unfortunately, in the early part of this series very few chemical studies were made. In 1925, Drs. A. F. Hartman and F. S. Smith³ made a study of these patients in regard to acid:base balance. As one should expect, a high incidence of alkalosis was found in six out of nine patients studied. Acidosis was diagnosed only twice in the whole series and here when the paucity of laboratory proof together with

the clinical notes are studied this diagnosis was placed in doubt. Stenosis was found in only one premature infant and this patient recovered after operation. Syphilis was not diagnosed in any of the patients of this study. Athrepsia proved to be the most common cause of death. It developed in thirty-five patients and seventeen or 48.5 per cent of these died.

COMMENTS AND CONCLUSIONS

Pyloric stenosis is to be looked upon predominantly as a surgical condition. However, it must be admitted that certain of these infants can be cared for medically. Each one should be individualized. A preliminary trial of medical treatment did not raise the mortality in this group. If the patient does not make satisfactory progress as judged best by weight gain, one is not justified in prolonging this method of treatment. It may lead to a poor nutritional state and greatly diminish the patient's chance of living.

Surgical treatment applied early, while the patient is in good condition, has a low mor-



tality. Aside from the development of the Fredet - Rammstedt operative technic the greatest advance in the care of these patients has been to subject them to operation early rather than late. Furthermore, medical treatment is usually long drawn out and taxing to both parents and physicians.

Finally, there is possibly no condition in infancy requiring closer cooperation and teamwork between the pediatrician and surgeon than does this one.

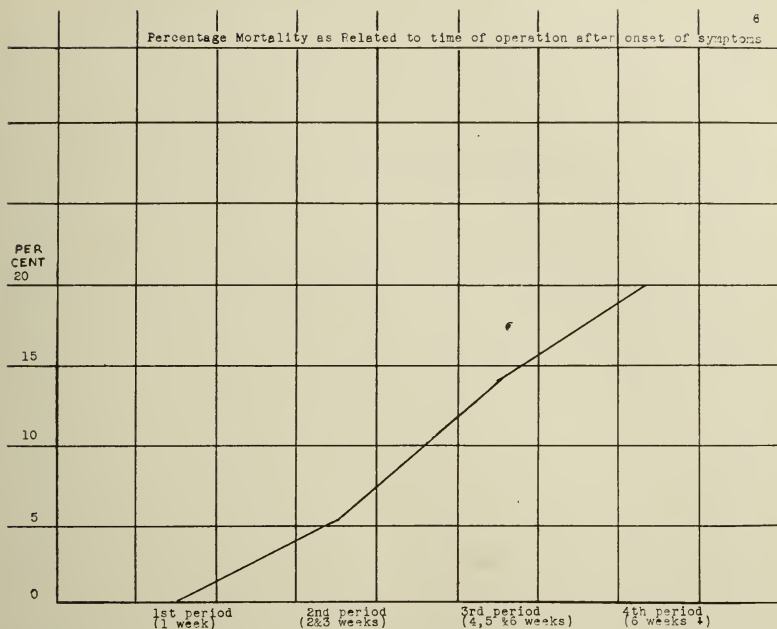
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Discussion on Paper of Dr. R. C. McGahee

DR. R. C. GOOLSBY, JR. (Macon): Dr. McGahee has given us an excellent statistical study of these hospital cases of pyloric stenosis. He mentioned that some of the cases treated privately might show some different findings, but this certainly should give us an index as to the prognosis and the treatment of our cases of pyloric stenosis.

The group non-surgically treated showed the highest mortality, and the group medically and surgically treated showed the lowest mortality in the figures he read to us. The success of the treatment seems to depend on the duration and severity of the symptoms, the infant's general condition, and whether breast feeding will be possible after the operation is performed. Operative technic, as Dr. McGahee mentioned, also must be considered. Blood transfusion before and after the operation tends to minimize shock and increase resistance. Gentleness, combined with speed, reduces



postoperative shock to a minimum. Preliminary gastric lavage is important, and the administration of glucose-saline solution before and after operation relieves the dehydration which is always present to some degree. If breast feeding is impossible during the post-operative period, frequent small feedings of a readily assimilable food should be given.

Medical treatment alone seems to be very uncertain in its results, requires a considerable period of time, and, if unsuccessful, leads to a grave state of malnutrition.

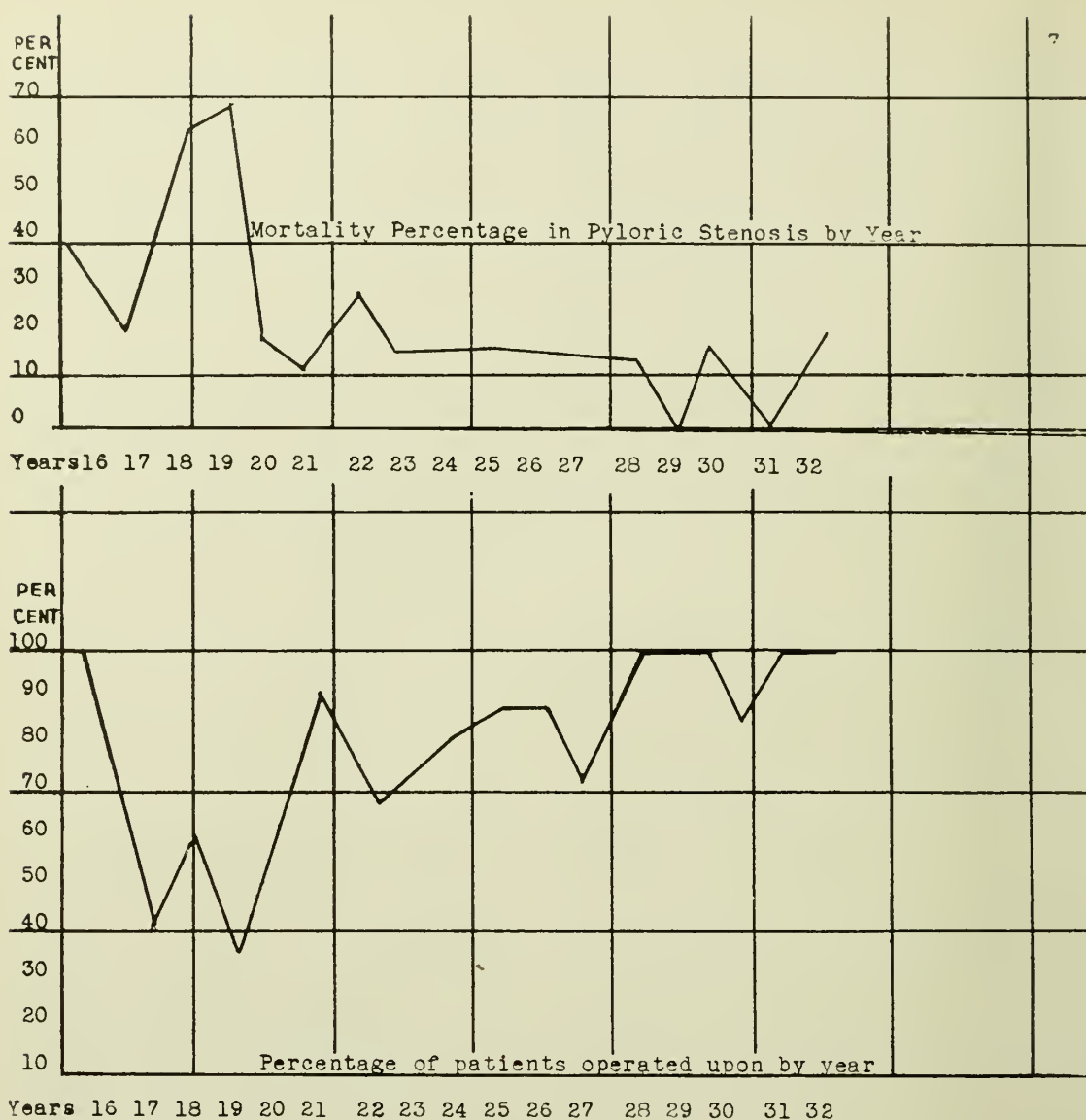
In 1933, there was a report of 145 cases of pyloric stenosis studied by H. L. Wallace and L. B. Wevill at the Royal Edinburgh Hospital for Sick Children. This covered the period of 1922 to 1933. All of these cases were operated upon. The mortality was 24.8 per cent. They conclude that if good results are to be obtained and the mortality rate lowered to any considerable extent, that the condition should be diagnosed and treated at a much earlier date than it is now. They suggest further that pyloric stenosis in infancy should be regarded as an abdominal emergency and that treatment should not be persisted in for weeks and months before surgery is resorted to unless the patient is improving markedly. In their series the time that elapsed between the first manifestation of obstruction and the admission of the patient to the hospital for treatment was three to four weeks. They state that it is possible that if the condition was diagnosed within one week of the commencement of symptoms and

sent for operation without delay that the mortality rate would be reduced.

DR. A. M. JOHNSON (Valdosta): This paper deals with those severe cases which were treated in a hospital. We do not see this high percentage of mortality in private practice, nor is the average case of such severity as is analyzed in this paper. I think the reason for this is that we see them earlier, we treat them for their vomiting earlier, and they do not reach the critical stage as the cases with which we are dealing in this paper.

To me the most outstanding thing reported in this paper is the high frequency among white children. It makes us wonder if the high development of the nervous system in the white race is partially responsible for this condition. My own experience in analyzing a number of these cases is that we often see cases of pyloric stenosis in children of the families of allergic tendencies. I should like to see some analysis made in regard to the allergic tendencies in the families of these children. I notice we quite often have a child with pyloric stenosis who later in life shows the various rashes we get from allergies.

In regard to the treatment of these cases, in our private practice we resort largely to cereal feedings, general treatment, lavages, of course, and the chief drug is atropin. We must remember in using atropin that these children have a very high tolerance for the drug and we do not get results unless we use very large doses. I have in mind one instance when very large doses of atropin were given with no relief and after



the baby developed a mild degree of atropin poisoning. complete relief of the vomiting resulted.

Being interested largely in the medical phase of this condition, we like to feel that most of these children can recover on medical treatment. In the average case of pyloric stenosis seen in private practice, seen early and treated vigorously before such marked hypertrophy of this circular muscle occurs, it is my opinion that at least 75 per cent will recover on medical treatment. The average clinic patient is seen in an athreptic condition when more radical measures must be taken. These cases are the ones that run our mortality rates up so high.

Something that should not be forgotten is the occurrence of alkalosis from protracted vomiting. The free use of Hartman's solution will reduce the mortality.

DR. C. H. RICHARDSON (Macon): I should like to call your attention to several interesting facts which this study suggests. First, as to whether the con-

dition is really a congenital condition or whether it is a congenital tendency. As most of these cases arise from the fourth to the eighth week of life, it would seem that the individual possibly inherits or has a tendency toward a pyloric spasm, and this constant spasm results in a hypertrophy which eventuates in hypertrophic pyloric stenosis.

It is also a fact that this disease has a particular predilection for males. This would seem to suggest that possibly the origin of this disease, as probably is generally believed, lies in the sympathetic nervous system. If we follow this we notice that the male is also far more susceptible to duodenal ulcer, and it brings up a very interesting speculation as to whether the condition is inherited or whether we are beginning rather early to develop it.

You note also that the disease is confined largely to the white race. The Negro is not an autonomic individual. Also, the increase in the disease would seem to be in keeping with the drive of modern life.

Just a word in conclusion about the treatment. I

think most of us will agree that the treatment is primarily surgical in the well developed cases of hypertrophy. These patients should be operated upon under local anesthesia. They should be operated upon very carefully. It is quite a catastrophe to do a Rammstedt operation and cut into the duodenum, which can very easily be done. If we are careful to incise through the serosa, and then separate the muscle planes with a mosquito hemostat and allow the mucosa to bulge through, we can do the operation practically without any risk of perforating the viscus.

Also, after the mucosa bulges through, an additional factor of safety is to tack over the operative area a little tag of omentum, and then careful postoperative treatment will bring most of these cases to a successful issue. I think it is interesting to speculate as to how far we can go into the realm of the sympathetic nervous system, even at birth.

DR. A. R. ROZAR (Macon): I enjoyed this paper very much. Regarding the mortality, I suppose that a Rammstedt operation was done in all of these cases. The early operation for the relief of the condition as we know was a gastro-enterostomy, and the mortality was very high; but with the Rammstedt it has been reduced to a very satisfactory figure.

There is one thing in the complications that he did not mention. I have observed in six cases that I have operated upon in the past few years that the healing of the wounds was very slow. There was apparently no infection, but the wounds simply would not heal for a time. This I have attributed to the starved condition of the tissues before operating. This slow healing was especially noticed in four of the cases and to a lesser degree in the others, although they all got well.

DR. R. C. MCGAHEE (Augusta, Ga.): I thank the gentlemen for their discussion. The only type of operation used in this series was the Fredet-Rammstedt. In doing this operation care must be exercised in not leaving any cut of the mucosa unrepaired. One infant who died showed this defect on postmortem examination. Also it is necessary to divide all the circular fibers at the pyloric ring. In a few infants it was necessary to do a second operation for this reason and also it was found at necropsy in one or two infants.

Dr. Johnson, I feel, is a bit optimistic about the effectiveness of medical treatment when he states that he feels 75 per cent of these cases could be cared for in that manner. I feel that athrepsia would develop in a good many accompanied by its high mortality.

One point should be stressed always and that is the preoperative care of these patients. Dr. Clopton, who did most of these operations, said that the battle was fought, lost or won, before the patient entered the operating room. By this he meant not waiting too long and especially the preparation they received beforehand by way of blood transfusion, restoration of body fluids and a normal acid:base balance. These measures certainly enhance their chances of living.

HEMORRHAGES OF THE BRAIN*

Their Differentiation and Treatment

J. CALVIN WEAVER, M.D.
Atlanta

Conservatism misdirected often encompasses a surgical tragedy, while radicalism today may be the embodiment of conservatism tomorrow. In no realm of surgery more than in those conditions complicated by hemorrhages of the brain do we more nearly find the exemplification of the adage "he who hesitates is lost." A lesion of a blood vessel of the brain is perhaps the earliest injury likely to be encountered and frequently the last catastrophe to snuff out the flickering candle of the aged. Symptoms resulting from concealed blood are frequently viewed with complacency, while a moderate hemorrhage revealed often causes great consternation.

Causes and effects of different types of hemorrhages of the brain must be predicated on basic principles if a logical diagnosis is made and rational treatment instituted.

As a basis for consideration of the different types of hemorrhages of the brain it may be assumed:

First, that progressive lesions affect the brain mainly through circulatory disturbances;

Second, that the rate of development may cause widely diverging symptoms in patients similarly injured;

Third, that the slower the hemorrhage the greater the proportion of tolerance established;

Fourth, that blood mixed with cerebrospinal fluid produces neurologic disturbances varying from slight difference in behavior to severe convulsive seizures, as well as meningeal thickening, cortical scarring and ventricular dilatation.

With these established facts as a basis, I will consider:

1. Hemorrhages of the brain of the new-born.
2. Spontaneous subarachnoid hemorrhage.
3. Subdural hematoma.
4. Extradural hemorrhage from rupture of the middle meningeal artery.
5. Apoplexy or subcortical hemorrhage.

Hemorrhage of the Brain of the New-Born

The story of hemorrhage of the brain of the new-born has been often sung, but when one contemplates the immediate reaction to the brain of blood in cerebrospinal fluid and

*Read before the Medical Association of Georgia, Savannah, April 23, 1936.

the tragic after effects of untreated cases, the story will bear frequent repetition. Much stress has been laid on the hemorrhagic diathesis as a cause, but it may be assumed that artificial, mechanical and physiologic trauma incidental to birth outweighs such a diathesis. Regardless of the cause, the possibility of epilepsy or internal hydrocephalus associated with idiocy, convulsions, or spasticity with idiocy, makes it imperative that early treatment be instituted for relief of the immediate symptoms with a view of preventing such future tragedies.

Frequent clinical symptoms that suggest a possible hemorrhage are: *shallow and labored respiration usually with a persistent moderate degree of cyanosis, drowsiness, difficulty in nursing, muscular twitching, post-cervical muscular rigidity and convulsive seizures.* The first child most frequently develops hemorrhage, particularly if there is a breech presentation. The most frequent of all causes is a forceps delivery.

Treatment

"Any method of resuscitation which necessitates compression of the head, or swinging methods which cause engorgement of possibly ruptured intracranial vessels, is obviously contraindicated." Though one authority contends that "lumbar punctures should be used in traumatic cases for diagnosis and reducing abnormal pressure, but are entirely futile as a means of hastening the disappearance of blood from the cerebrospinal fluid," there is no gainsaying the fact that repeated spinal punctures bring about rapid disappearance of blood and frequently clear up the symptoms. The indication is the stopping of the hemorrhage, followed by removal of as much blood as possible to prevent organization of its constituents, which may block the outlets from the ventricles with resulting hydrocephalus, spasticity, idiocy and convulsions. To accomplish this the child must be treated first for shock, artificial heat being used; undue handling and spinal puncture are to be avoided; and physiologic salt solution should be introduced subcutaneously but not in the vein, until favorable reaction is established. Then blood from the vein is injected deep into the gluteal muscle as a hemostatic, or parental blood in the hemorrhagic disease group, followed by

repeated lumbar puncture, daily or twice daily until the blood disappears from the cerebrospinal fluid and the symptoms clear up. A few inhalations of chloroform should be given before the spinal puncture is performed.

Spontaneous Subarachnoid Hemorrhage

The arachnoid, "like a spider web," is a delicate membrane which envelopes the brain loosely, bridging over the convolutions, under which lies the subarachnoid space filled with cerebrospinal fluid. No definite condition can be assigned for a spontaneous subarachnoid hemorrhage, though congenital weakness of a vessel wall, aneurysm and arteriosclerosis have been found in different cases. The name is accurately descriptive as the attacks come without warning in persons thought to be in good health. They are not confined to adults of middle age as they may occur in patients comparatively young. By way of illustration: a strong, healthy girl 12 years of age had been running and playing immediately after eating and was stricken with a severe frontal headache which persisted despite sedatives. She was admitted to the hospital, where roentgenograms made of her sinuses gave negative findings. The headache persisted and a spinal puncture was performed which revealed uniformly bloody spinal fluid. The most frequent precipitating causes are overactive exercises which excite the circulation and raise the blood pressure. One young man, aged 26, was stricken on a hot summer afternoon while working with a motor boat; another while driving his automobile after changing a tire; another, a young athletic man, while going through dumb-bell exercises; a country physician with a large practice, while driving his automobile; another country physician who had been under an unusually heavy strain was stricken just after eating supper. Lifting heavy weights, drinking bouts with sexual excess, emotional upsets and straining at stool may also be listed as causes.

Though several hours may pass before the full clinical picture develops, the more common early symptoms noted are headache, vomiting and rigidity of the neck. Later, signs of meningeal irritation, palsies of cranial nerves of the eye muscles, increased intracranial pressure with decreased reflexes and.

finally, unconsciousness may develop. There is generally a rise in temperature and an increase above 10,000 of the white blood cells.

Treatment

Sedatives should be used in the early stage to relieve the headache and restlessness. The patient should be confined in bed until all objective symptoms have cleared up and there is freedom from subjective complaints. Repeated daily lumbar punctures should be done until the fluid is clear and the pressure normal. The fluid should be removed cautiously and slowly with the aid of a manometer, the pressure being reduced to a high or low normal level; for example, if the initial reading is 300 mm., then reduce it to 175 mm.; if it is 175 mm., then reduce it to 85 mm.

Subdural Hematoma

Pathologically defined this consists in a collection of blood, often large in amount, situated between the two membranes, the dura mater and arachnoid and enclosed within a distinct membrane which appears to be derived from coagulated blood. It is of traumatic origin, of slight violence favorably directed to rupture one or two cerebral veins passing from the brain to the dura, nearly at right angles to both. As there is no tortuosity to allow for possible movement of the brain, the veins are easily torn. It most frequently results from a sharp blow on the front or back of the head. This type illustrates graphically the narrow margin separating physiologic from pathologic pressure.

"Subdural hemorrhage, of all pathologic conditions, is the one which most perfectly illustrates the variety of clinical manifestations produced by lesions developing at different rates."

Occasionally a rapid hemorrhage produces profound symptoms of compression of the brain, but usually there is an interval of several days before symptoms of hemorrhage are noticed. Headache, severe and persistent, with slight mental symptoms are more constant; a slight degree of sleepiness, a loss of initiative and absent mindedness, are most commonly noticed. Localizing signs are strikingly absent except for a Babinski reflex and reduction or loss of abdominal reflexes. The following is a typical case:

J. F. G., male, aged 29, sustained a blow on right forehead in an automobile accident. He was not un-

conscious. He remained in the hospital one week, then returned home despite a persistent headache. He developed slight mental symptoms, and on the eleventh day after the injury he was given morphine gr. $\frac{1}{4}$ for headache and immediately developed a deep stupor and could not be aroused for 24 hours. On examination the epigastric and abdominal reflexes were absent, there was a suggestive bilateral Babinski reflex and an unsustained ankle clonus of both ankles. Blood pressure was: systolic 108, diastolic 0; pulse rate 60. Spinal puncture revealed a clear fluid under 248 mm. pressure, registered with an Ayer manometer. Fluid was released until the pressure registered 110 mm. Immediately the patient could be aroused and would answer questions intelligently, although he would yawn frequently and was drowsy. Two hours after the spinal puncture he lapsed into his former stupor.

The immediate vanishing of the stupor after withdrawal of spinal fluid not only illustrated the narrow margin between physiologic and pathologic pressure, but the quick change from the stupor and back again established the diagnosis of subdural hematoma.

The following operative procedure suggests the treatment indicated in such cases. It is simple, painless and without danger, and should be done for any patient who has received a slight blow on the front or back of head in whom there develops persistent headache and slight mental symptoms, with bilateral Babinski or ankle clonus:

Four trephine openings about $1\frac{1}{2}$ inches from the midline were made on either side of the head; the two front near the hair line, the two posterior near the junction of the parietal and occipital bones. The right posterior opening revealed blood under the dura so a front opening was made, the dura was opened under both trephine holes; a very small rubber catheter was introduced under the dura through the posterior opening and blood was washed out through the front opening. The following day the patient was free of headache, was mentally clear, ate breakfast and left the hospital, cured in one week.

As hemorrhage is frequently bilateral, both sides of the head should be explored in every case.

Extradural Hemorrhage from Injury of the Middle Meningeal Artery

This dangerous and tragic injury illustrates the two aphorisms laid down in the beginning "symptoms resulting from blood concealed are frequently viewed with complacency," and "conservatism misdirected often encompasses a surgical tragedy." It also shows how one factor, the rate of de-

velopment, produces different clinical manifestations in two lesions of similar distribution.

The orthodox description describes three stages. The patient is knocked temporarily unconscious, the stage of primary concussion. There may or may not be a fracture over the temporal region. The second stage consists of a return to consciousness, the so-called "lucid interval," which in some cases does not occur. The third stage, increased intracranial pressure causing gradual coma within 24 hours.

Classical cases with all orthodox signs and symptoms are not always found and may be misleading. As a rule, the patient is knocked unconscious, regains consciousness, then gradually lapses into unconsciousness with deep snoring breathing. Other signs of value are twitchings of the head or limbs, motor aphasia, facial paralysis and hemiparesis.

Illustrating the effects of that one factor—the rate of development—the two following cases are presented:

A stock broker, aged 43, right handed, stumbled into a grease pit, striking the left side of his head. He was admitted to the hospital while still rational, but complained of severe headache. He was given morphine gr. $\frac{1}{4}$ by his physician without relief and morphine gr. $\frac{3}{8}$ later, as the pain was unbearable. He developed a deep stupor. When seen in consultation 24 hours later he could not be aroused. Spinal puncture revealed bloody spinal fluid.

He gradually developed a weakness of his right arm and right leg, a positive Babinski reflex of right foot and inability to speak. He grew restless and was trephined a week after the accident, the family finally giving consent for the operation.

The diagnoses of a slow hemorrhage from rupture of a branch of the left meningeal artery and a subarachnoid hemorrhage were confirmed at operation. A well-organized epidural blood clot nearly an inch thick was removed. With the relief of pressure, the patient began immediately to try to talk. In a month's time the paralysis had cleared, he could talk and was well symptomatically.

In contrast to this slow type the following exemplifies the axiom "he who hesitates is lost."

A girl, aged 11, right handed, fell from her bicycle, striking the right side of her head on the pavement. She was dazed for a few moments and then began to cry. She was laid down on a couch but played with a pet dog, despite some headache. Two hours later she became very stuporous and was aroused with difficulty. She was rushed to the hospital by her physician and when seen in consultation one observation was sufficient to convince one of a most desperate condition.

She was pale, markedly unconscious, the right pupil was widely dilated, and there was a marked degree of spasticity in her left arm and left leg, her right arm and right leg being mildly rigid and jerky. There was the appearance of an impending convulsion. The widely dilated right pupil with extreme spasticity of the left arm and leg indicated definite pressure on the right cortex, while the rigid jerky condition of the right extremities, with unconsciousness, pointed to a rapidly increasing intracranial pressure. Rupture of the trunk of the right middle meningeal artery was diagnosed and confirmed by immediate trephine over the right temporal region. A large epidural blood clot was removed and the spurting meningeal artery was ligated. With completion of the operation under local anesthesia, the spasticity had disappeared and the child was quiet and relaxed. She made a complete recovery.

These cases should be operated upon immediately and after the artery is ligated and the clot removed, the dura should be opened and the cortex inspected for brain damage.

Apoplexy or Intracerebral Bleeding

The fifth and last type of cerebral hemorrhage has been treated the same way for many decades with the administration of iodides and salines. Any suggested departure from this treatment in favor of a logical scientific operative interference calculated to prevent local destruction of cerebral tissue by the escaped blood and incidentally to relieve increased intracranial pressure that will cause anemia of certain centers that may result in death, has generally been met with such criticisms as: "If 'twas my own brother, I wouldn't do that," or perhaps, "If you operate, won't it make it bust loose again?" I refer to apoplexy or intracerebral hemorrhage. The loudest opposition is voiced by doctors who themselves always resort to the analogous procedure of boring a hole in a thumb nail that has been injured to allow an escape of the loose blood and to relieve the pain. As many cases of apoplexy occur in patients under fifty, the suggestion to be offered is intended to apply to certain suitable cases of middle age or younger. Irrespective of the anatomy, the pathologic change is the basis for operative interference. As stated by Remsen: "Farther reaching than the boundaries of the cavity itself are the effects of the hemorrhage." Peripheral to the walls a reactive inflammation occurs, and serious infiltration and edema may be quite marked. Further away, the nerve tissue may be not actually destroyed, but may be subjected to pressure which temporarily, at least, may cause physiologic inhibition which may lead

to permanent pathologic destruction, should the pressure persist. Apart from the symptoms of actual destruction we must consider interference with physiologic functions due to pressure, inflammatory reaction, edema, anemia or infiltration which may project similar symptoms, and from which complete recovery is possible should the inciting cause be removed. Destruction may not be benefited directly by operative means, but potential destruction, at least, may be warded off by relieving pressure, edema, infiltration, or reactive inflammation, which if persistent may, and usually will, transform physiologic disturbance into pathologic destruction. This is particularly true since disturbance of intracranial pressure is perhaps the most important consideration.

"When there is an immediate outpouring of blood, with little or no subsequent oozing, the formation of a cyst through liquefaction of the clot and organization of the surrounding nerve elements begins within the first few days." This condition illustrates my statement in the beginning, "radicalism today may be the embodiment of conservatism tomorrow."

To those not surgically minded let me beg that you not withhold a procedure which, in certain young adults, offers everything to be gained and nothing to lose: is practically painless and is of little more danger than boring a hole in a thumbnail for evacuation of loose blood. Allow a subtemporal decompression to be done after a sufficient number of days has elapsed for a cyst to form, thereby relieving the increased intracranial pressure and giving a chance for the blood to be withdrawn. In this way only can you hope to save certain selected cases from chronic invalidism or early death.

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DISCUSSION ON PAPER OF DR. J. CALVIN WEAVER
Dr. Agnew H. Hilsman (Albany): I wish to congratulate the essayist for his simple and thorough pre-

sentation of so difficult a subject and in language that we all could comprehend.

My discussion will be limited to that increasing group of cerebral lesions due to external violence as a result of the modern mania for speed. The cases amount to over 125,000 a year and we as general surgeons are being called upon daily to treat them. My opinion is that the final chapter of traumatic cerebral hemorrhage has not been written. One operator will show a good result with expectant treatment; another as good or better results with the open operative technic; another will advocate spinal punctures while another will openly condemn punctures. About one-third of the cases I see have a massive brain injury and rarely come out of shock. These all die. Perhaps another third are knocked out temporarily, will show a bloody spinal fluid and after one or two aspirations will clear up and require no further treatment. This leaves only about one-third of the cases in which there is a question as just what is the best procedure.

Spontaneous subarachnoid hemorrhage undoubtedly occurs more frequently than we realize, particularly in young adults and children, and I am in thorough accord with the author in his method of handling these cases. The common syndrome consists of headache, somnolence and yellow spinal fluid, with the history of an injury to the head. These cases I feel are better operated upon after the clot has been liquified and is encased in its membrane which gives the general surgeon time to transfer the cases to a neurosurgeon to be dealt with in the manner in which the author has described. The classic picture of the three stages of rupture of the mid-meningeal artery often do not occur at all and if so it may be of such short duration as not to be noticed. I think in this type of injury, after a careful neurologic study combined with combatting shock by hypertonic solutions and lumbar puncture, a valuable prognosis may be obtained by noting the amount of blood present in the spinal fluid. With an increase of coma, convulsions, dilatation of the pupil on the side of injury, slowing of the pulse and development of hemiplegia, open operation should be done within the first 24 hours, evacuating the clot and ligating both ends of vessel.

With regard to the apoplexies I should like to ask the author to give us his statistics, the number he has done and his results. We all have had many of these patients to return to a useful life afterwards, some to undergo several recurrences and then survive. It seems to me that in these young patients you would still have hypertension or some other cause to contend with. It is my earnest desire that the author has been able to do something for this class of patients.

FIFTH DISTRICT MEDICAL SOCIETY

The next meeting of the Society will be held at the Academy of Medicine, Atlanta, April 29, 1937. Guest speakers will be: Dr. Porter P. Vinson, Richmond, Va., Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, Medical College of Virginia; Dr. Bret Ratner, N. Y. City, Clinical Professor of Pediatrics, N. Y. University College of Medicine; Dr. Edwin C. Hamblen, Durham, N. C.

WHEN ANTISEPTIC SURGERY CAME TO GEORGIA

T. C. DAVISON, M.D.
Atlanta

To fully appreciate the advent of antiseptic surgery, one must be familiar with conditions that existed prior to that era.

Surgical operations were known to the ancients, but the operations were limited in their scope and the results often unsatisfactory. Prior to the discovery of the anesthetic properties of ether by Crawford W. Long, the discovery of bacteria by Pasteur and the use of antiseptics in surgery by Lister, the practice of surgery was classed with the arts, and the earlier surgeons were often real artists. With the arrival of anesthesia, knowledge of bacteriology and antiseptics, surgery became a science.

The earlier physicians were close observers and at times recorded their observations without understanding them. Two thousand years before bacteria were discovered, or antiseptics were applied in surgery, Hippocrates wrote that "In the treatment of wounds, they should never be irrigated except with boiled water or wine, and the hands and the nails of the operator should be cleansed." Following Hippocrates and Galen little progress was made for fourteen centuries.

Ambrose Pare in the sixteenth century made great advances in surgery. It was customary at that time to consider gunshot wounds as being poisoned and they were treated first with a dressing of boiling oil. Pare, as an army surgeon, observed that when the supply of boiling oil ran short the "neglected cases" did better than those who received the customary oil treatment, and he profited by this observation.

Before the days of anesthesia, when it was decided that an amputation was necessary the patient was asked: "Will you have the leg off, or won't you?" If he chose to submit to the operation, he probably was given an opiate and a stiff drink of whisky or brandy and the operation was performed quickly by the artist-surgeon while the patient was held by several robust orderlies selected for their strength. The patient's

cries often could be heard for several blocks.

Robert Morris in his book "Fifty Years a Surgeon," tells of surgery in New York before the advent of antiseptics. He says: "Dr. Bryant, who became very much up-to-date later, would at that time hold a knife between his teeth in pirate fashion while adjusting a tourniquet and then give the knife two or three quick strokes across the leather heel of his shoe in order to perfect the edge before amputating a leg."

It was customary at that time for the doctors to wear a Prince Albert coat, high collar, long cuffs and a beaver hat, and the only preparation for an operation was to remove the hat. They washed their hands when the operation was finished. I was told by the late Dr. W. J. Love of Alabama that he had often seen Dr. W. F. Westmoreland, Sr., of Atlanta, amputate a thigh and never get a drop of blood on his cuffs, and that he would lance a foul peri-rectal abscess and immediately use the same knife, after wiping it on a towel, to amputate an arm or leg. Remember that the words germs and antiseptics did not occur in their vocabularies. So-called laudable pus was expected and desired in every wound, and gangrene was a very common complication. The mortality rate following operations was very high, being reported as high as 79 per cent by some operators.

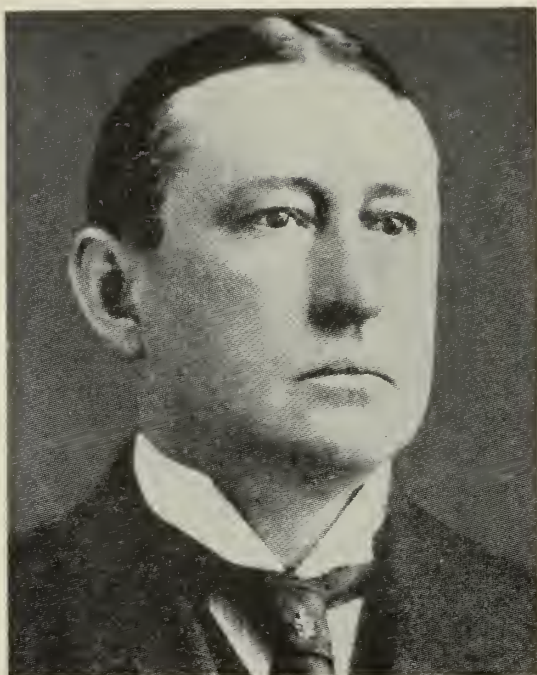
The suffering from infected and swollen wounds was often intense and it was customary in the eighties for sightseers in New York to include, along with Chinatown and Brooklyn Bridge, the wards of Bellevue Hospital in their tours where they witnessed the agonies and heard the groans of post-operative patients. Sick people went to hospitals only as a last resort; most of the operating was done in the private homes, and without the aid of trained nurses.

The trained nurse of today is an institution of modern times. In the middle of the nineteenth century nursing as a profession was unborn. The century preceding has been referred to as the "dark age" of sick nursing. The female hospital attendants or servant nurses, as they were called, were referred to in the London Times of April 15, 1857, as follows: "Lectured by committees, preached at by chaplains, scowled on by treasurers

and stewards, scolded by matrons, sworn at by surgeons, bullied by dressers, grumbled at and abused by patients, insulted if old and ill-favored, talked flippantly to if middle-aged and good humored, tempted and seduced if young and good looking—they are what any woman might be under the same circumstances."

Joseph Lister, Professor of Surgery in the University of Glasgow, became impressed with the high mortality from septicemia, pyemia, erysipelas, tetanus and hospital gangrene. He reported in his work a mortality of 45 per cent in amputations despite all precautions. He became interested in Pasteur's work and at once attempted to prevent the development of micro-organisms in operative wounds. After trying out several other chemical antiseptics, he decided on carbolic acid and first used it successfully in the case of a compound fracture in August, 1865. He used the acid as a spray in the atmosphere of the room, and later in the wound and on the hands of the operator. Visiting surgeons came from foreign countries to see Lister demonstrate his new antiseptic system and, during an operation, when he called attention to some special finding, some visitors would attempt to insert an index finger into the wound to feel the pathologic changes and they were much disturbed and embarrassed when this privilege was denied them. This was a custom everywhere prior to the antiseptic era. Lister was highly criticized by his colleagues and the antiseptic idea was slow of acceptance by the profession. He came to America and demonstrated his carbolic acid spray in New York in 1877. This was witnessed by our former Governor, the late Dr. L. G. Hardman. While Lister in Scotland was experimenting with carbolic acid made from coal-tar, Dr. L. A. Dugas of Augusta was using tar water, made from pine tar, as a preventive for gangrene, during the Civil War in America.

Although "Listerism" reached New York in 1877, it was slow in being accepted there, and did not reach Georgia until the eighties. Dr. William F. Westmoreland, Sr., was Professor of Surgery at the old Atlanta Medical College and had been an army surgeon during the Civil War. He was an artist of the old school and he operated in his dignified



Willis F. Westmoreland, M.D. (1863-1935)

CAT.

Prince Albert coat and white cuffs. He, like others of his day, did not believe that operative wounds were infested with microscopic "little fairies" called germs or bacteria, and he resented the new ideas and methods of the younger generation. His son, Dr. Willis F. Westmoreland, Jr., graduated in 1885 and he had heard about the new antiseptic methods and went to Philadelphia in the same year to learn about them, but was disappointed as they were not being used there. He later went to New York and found at Bellevue Hospital that antiseptic methods were being used in only one of the wards. He then went to the Roosevelt Hospital, which was the only hospital in New York at that time using the antiseptic system properly. The use of bichloride of mercury in solution of 1:1000 had replaced the carbolic acid spray. Upon his return to Atlanta, enthused with new ideas, he was much discouraged by the college officials who were not in sympathy with the new movement, and the Dean, Dr. H. V. M. Miller, would not permit its introduction.

At the college clinic the operations were performed upon a wooden table, in the old amphitheatre, immediately following the demonstration of anatomy on the cadaver on the same table. Sea sponges were placed in a basin of water and later used for cleansing

wounds; the sponges were never sterilized. The mortality from operations in compound fractures was very high—85 per cent died of septicemia. St. Joseph's Infirmary opened in 1881 and was the only hospital in Atlanta at that time. The Infirmary did not have an operating room until 1890. Operations were performed in the rooms and wards. Many operations were done in private homes and boarding houses.

Most of the operations were for removal of external tumors and amputations for compound fractures; the abdomen was seldom opened except for stone in the bladder. At a later period the abdomen was opened more frequently for the treatment of gunshot wounds. The surgeons used long silk ligatures with the ends brought out of the wound. The assistants, usually medical students, began "teasing" the sutures on the fifth day. The sutures usually "came away" about the eighth day. The wound was dressed daily or oftener and union by first intention was unknown.

In the transactions of the MEDICAL ASSOCIATION OF GEORGIA of 1886 appears an article by Dr. Eugene Foster of Augusta on "Antiseptic Midwifery," in which he stated: "I shall attempt to demonstrate that the antiseptic system is founded upon speculation pure and simple and, furthermore, that this antiseptic system, as a routine practice, is, in its essential features, unscientific, unsuccessful, unnecessary and frequently harmful to the lying-in-woman." He followed this statement with forty-three printed pages in support of the "Good old way" of obstetrics.

While Lister's carbolic acid spray was used in the early eighties by a few of the surgeons in Georgia, the proper application of antiseptic principles and the use of bichloride of mercury solution probably was first introduced by Dr. W. F. Westmoreland, Jr., of Atlanta at the college clinic after his return from New York in the fall of 1886. His enthusiasm was not shared by his father, who was Professor of Surgery and "Little Willis" as he was called, had a hard time persuading "the old man" to try out the new technic, but he was persistent and finally his father was induced to remove the Prince Albert coat, his cuffs, to roll up his sleeves and to wear an apron. He prepared his hands under

the direction of his son and after the instruments and field of operation were prepared, he operated, removing a sarcoma from the upper arm. The wound was closed and dressed by young Westmoreland while being highly criticized by his father in language characteristic of the Westmorelands. While operating Dr. W. F. Westmoreland, Sr., had hung his coat in an ante-room and someone had stolen his wallet containing \$100.00, some of the students remarked that "It served him right for coming into the operating room in his shirt sleeves." Contrary to the usual custom this wound was not dressed the next day, nor for several days in spite of the impatient demands of Dr. Westmoreland, Sr., who daily inquired of his son as to how the patient was and if there was any drainage, for he expected the usual laudable pus. I have a letter from Dr. J. T. Brice of Flowery Branch, Georgia, who states that he was present at that operation and that "on the sixth day the class witnessed the removal of the dressing, and I shall never forget the look of utter amazement on the face of Dr. Westmoreland, Sr., as he beheld the wound healed perfectly with no sign of the so-called laudable pus. He then turned to 'Little Willis,' bowed low and said, 'My son, I take off my hat to you, you have done it.' After a moment of tense silence he turned to the class, raised both hands as high as his head, with the palms outward, and cried in a voice almost overcome with emotion, 'My God, my God, think of the people who would be alive today, had I known of this years ago.'"

Dr. Westmoreland, Sr., died shortly after the above incident and was succeeded by his son, W. F. Westmoreland, Jr., as Professor of Surgery, who lived until Dec. 4, 1935.

In 1891 antiseptic surgical principles were fully accepted by the surgeons of America. Aseptic surgery, founded upon "Listerism," quickly succeeded it in 1892, when introduced by Von Bergmann, in Germany.

The younger generation casually accepts the telephone, automobile, radio and aeroplane as necessities today, without questioning the years of progress that have made them possible. I wonder if we are not guilty of taking for granted the marvelous contributions of medical science without paying the

proper homage to those pioneers who dared enter unknown fields at great cost and personal sacrifice, and without sympathy or understanding from their colleagues. I believe that if we could get a panoramic view covering the miraculous advances in the science of surgery in the past sixty years we would be more appreciative of the benefits of antiseptics and asepsis in surgery.

HISTORY OF UROLOGY IN GEORGIA*

STEPHEN T. BROWN, M.D.
Atlanta

The history of urology as a permanent progressive branch of medicine and surgery in the State of Georgia dates from the organization of the *Atlanta Urological Society* in 1928, which was the nucleus for the greater organization, the *Georgia Urological Association*. But long before this time attempts were made to establish urology as a distinct branch of medicine and surgery in this State.

The earliest authentic urologic operation that I have been able to unearth in the State was performed in 1877, in the "pre-specialty" days, by Dr. Robert Battey of Rome, for a stone in the bladder. The operation was performed on Mr. Smith Treadwell at his beautiful home in Tilton. His was one of the oldest Colonial homes in the northwest section of the State. It stood on a sloping hillside studded with fine old trees, under which gathered friends and relatives anxiously awaiting the result of the operation.

Within a high ceilinged room, the patient was solemnly placed upon a handsome, hand-carved dining table, accustomed only to the weight of delicious Southern dishes and prepared as only a Southern hostess could prepare them. Now it creaked to the weight of its master, who was to submit to one of the most momentous operations of that era. In place of the soft laughter of congenial guests, there was the hushed gravity of an awe-inspiring occasion.

Lamps, polished and glistening, shed an uncertain glow over the patient's form. Five doctors were there—one to administer the

anesthetic and three to assist Dr. Battey in the operation and to witness this phenomenal event in the progress of surgery.

A general anesthetic was administered carefully and hopefully. The anesthetic began to take effect, while the faces of the five doctors bent forward, eager to begin this new experiment. Contrary to expectations, the patient did not relax as was desired, to the intense disappointment of the three assisting physicians whose efforts were confined to holding him on the table, while Dr. Battey was left with the entire responsibility of the operation, which he performed with amazing skill under the circumstances. The stone, which was described by a member of the patient's family as being slightly larger than the average hen's egg (the small end more pointed), was removed through a perineal incision. Due to its size, some fragments were broken from the large end before it could be removed. For some time after the operation, fragments would wash out through the drainage tube when the bladder was irrigated. Even after the tube was removed, particles were passed. But, ultimately, the patient recovered and did not have dribbling of urine following this operation.

He died in 1896 at Spring Place, about twenty miles from his old home in Tilton, nineteen years from the day of his operation. Hundreds of people visit his grave each year, prompted by a curiosity to see the face on the tombstone, but I doubt seriously if any of these visitors ever associate his name with one of the first successful urologic operations performed in Georgia—one that was to blaze a new trail in the annals of this particular field of surgery.

There is a unique incident not connected with the operation, but one that is possibly familiar to you through Mr. Ripley's "Believe It Or Not" column in the newspaper. I refer again to the tombstone with the uncanny likeness of the man buried beneath it, traced indelibly in the marble veining. Science has many conflicting explanations. The one most commonly accepted, I believe, is that the portrait took form through some strange process of nature in the graining of the marble. Why the resemblance of the markings on the stone to the man buried be-

neath it must still be explained. The point is: that man was the patient of whom I write.

Probably the first man to enter the field of urology in Georgia was Dr. W. L. Champion of Atlanta. Certainly, no one has been more instrumental in its development. It has been his privilege to see every epochal advancement in this specialty during the past forty-three years.

He was born July 6, 1868, at Greensboro, Ga., the son of a distinguished Confederate veteran. At the age of one, his family moved to Eatonton in the adjoining county where he received his early education in the public schools. After graduating from high school, he worked for a few years as prescription clerk and as an understudy of Dr. James D. Weaver. Through the influence of his preceptor, Dr. Weaver, he entered the College of Physicians and Surgeons of Baltimore, which later merged with the University of Maryland. He graduated in medicine in 1891 and took up general practice in Eatonton. During the first year and a half he was quite successful and accumulated sufficient funds to make possible his ambition, that of specializing in genito-urinary diseases, as it was termed at that time. In 1892, he attended the New York Polyclinic for a postgraduate course in urology, and in 1893 he opened his office in Atlanta, confining his work exclusively to diseases of the genito-urinary tract. In 1894, Dr. Champion formed a partnership with Dr. J. A. Childs and this association continued until 1901, when illness forced Dr. Childs to retire. In 1908, he spent several months in the clinics of Vienna, Berlin and Paris. This was about the time the catheterizing cystoscope was perfected, so he took a course in catheterization of ureters at the clinic of Dr. Karo in Berlin. He also spent considerable time in the clinic of Dr. Luys in Paris.

Due to Dr. Champion's tireless efforts to promote urology in this section of the country, plans were made to establish a department of genito-urinary diseases at Grady Hospital, Atlanta's charity institution. These plans were completed and the department established in 1907. This was the beginning of urologic services in the hospitals of Georgia. He has devoted much time to training

and assisting younger men in the profession. He was a member of the first urologic society formed in Atlanta in 1914. In 1928, when the Atlanta Urological Society was organized, Dr. Champion served as its first president. He also served as first president of the Georgia Urological Association, organized in 1930.

Many of Dr. Champion's contributions are found in the Transactions of the Medical Association of Georgia and include: *Report of Fifty-five Cases of Hydrocele Cured by Injection with Carbolic Acid*—1908; *Sterilization of Profound Criminals, Rapists and Idiots*—1913; *Suprapubic Prostatectomy*—1914; and, *Recurrence of the Prostate*—1923. Without claiming the least credit for himself, he is proud of the advances made during his time and remains persistently confident of the future progress of urology.

Before going further into the lives of the men in Georgia who have made names for themselves in urology, let us go back to 1914, when the first urologic society in the State was organized. This event took place in Atlanta, and it is interesting to note that its organizer was one of the leading dermatologists of the South, Dr. Bernard Wolff. The organization was known as the *Genito-Urinary and Dermatological Society*. Meetings were always informal and were held in the offices of the different members of the society. Interesting papers and discussions were usually followed by a social session. The first president of this society was Dr. Bernard Wolff, succeeded by Dr. Miller B. Hutchins, both of whom have since passed away. Dr. Omar F. Elder was secretary. This society functioned until the beginning of the World War, when it was disbanded.

Another outstanding pioneer in the field of urology in Georgia and the possessor of a brilliant inventive mind is Dr. Edgar G. Balenger. He was born in Trion, North Carolina, in 1877. He received his medical education at the University of Maryland, graduating in 1901. He served his internship at the University Hospital, and spent one and a half years as surgeon for the Maryland Granite Company. He came to Atlanta in 1903, limiting his work immediately to urology. In 1905, following the formation of the Atlanta School of Medicine, he was

appointed to the chair of urology, which position he held until the Atlanta School of Medicine and the Atlanta College of Physicians and Physicians and Surgeons joined to become the Emory University School of Medicine, at which time he was appointed professor of urology at Emory, a position he held until 1925.

In 1910, he went to Germany where he attended the Wechermann Clinic, and saw salvarsan administered by Dr. Wechermann. Upon his return to Atlanta he was a strong advocate of salvarsan in the treatment of syphilis.

In 1911, Dr. Omar F. Elder became associated with Dr. Ballenger and together they did some splendid work. They have devised many improvements in urologic instruments including the Ballenger endoscope, the suprapubic ring for collecting urine, Ballenger pump, and the Ballenger hemostatic bag.

Dr. Ballenger has been a member of the *American Urological Association* since 1920. He was second president of the Southeastern Branch of the American Urological Association. He is a prolific writer. Among his valuable publications pertaining to this new specialty was a book on urology written in 1907. This was revised several years later.

Dr. Montague L. Boyd played an important role in the development of urology not only in the State but in the Southeastern Branch of the American Urological Association. He was born in Savannah in 1882. He received his early education at Woodberry Forest in Orange, Virginia, and St. James, near Hagerstown, Maryland. He also attended Emory College. He graduated in medicine in 1907, from Johns Hopkins University, and spent the following two years as an assistant to Dr. Hugh Young. He was then appointed resident urologist at Johns Hopkins Hospital. He located in Atlanta in 1911, limiting his practice to urology. He was associate professor of urology at the Atlanta Medical College for several years, and served as head of the department of urology at Emory University from 1925 to 1934.

An indefatigable worker, Dr. Boyd spent much time and unlimited energy organizing and developing the Southeastern Branch of the *American Urological Association*. He served as president of this organization from

1932 to 1934. He has been a frequent contributor to medical literature, and the bulk of his writings deal with urologic subjects. Among his many and valuable contributions was one on pathology of benign prostatic hypertrophy, chronic prostatitis and carcinoma of the prostate, a work which he did with the late Dr. J. T. Geraghty, and which was accomplished during his last year in Baltimore. Probably his most notable contribution to the literature on urology is his book, *Report of American Urological Association to the National Conference on Nomenclature of Urologic Diseases*, this work being incorporated in the *Standard Classified Nomenclature of Diseases* published by the National Conference and the Commonwealth Fund, Jan., 1933.

No history of urology in Georgia, however brief, would be complete without mention of that courageous pioneer, Dr. Walter B. Emery. He located in Atlanta in 1896, and has been one of the staunchest supporters of this specialty Georgians have known. His counsel and aid to the young men will never be forgotten.

Now we come to the formation of the *Atlanta Urological Society* in 1928, which was largely brought about by the enthusiastic activities of the late Dr. Allen F. Caldwell, who was the only elected member of the original Genito-urinary and Dermatological Society. Dr. W. L. Champion was elected president with Dr. W. B. Emery as vice-president and Dr. A. F. Caldwell as secretary. At this time urology was well established in Georgia and a splendid group of local men had chosen this specialty for their life's work. With the *Atlanta Urological Society* as the nucleus, the *Georgia Urological Association* was organized at the meeting of the MEDICAL ASSOCIATION OF GEORGIA in August, May, 1930. Dr. W. L. Champion of Atlanta was made president, Dr. W. F. Reavis of Waycross, vice-president and Dr. A. F. Caldwell of Atlanta secretary-treasurer. The executive committee was composed of Dr. E. G. Ballenger of Atlanta, Dr. Ernest Corn of Macon and Dr. W. A. Upchurch of Atlanta. Mention should be made here of the charter members, as it is due to their intense interest and unceasing activities that urology is steadily advancing

in this State. They were: Dr. L. W. Pierce, Macon; Dr. Wallace L. Bazemore, Macon; Dr. M. K. Bailey, Atlanta; Dr. W. F. Reavis, Waycross; Dr. Richard Binion, Milledgeville; Dr. E. B. Anderson, Americus; Dr. J. L. Garrard, Rome; Dr. J. C. Keaton, Albany; Dr. Joseph A. Thomas, Valdosta; Dr. S. A. Kirkland, Atlanta; Dr. R. F. Wheat, Bainbridge; Dr. O. F. Elder, Atlanta; Dr. Earl Floyd, Atlanta; Dr. W. L. Champion, Atlanta; Dr. M. A. Hubert, Athens; Dr. H. W. Birdsong, Athens; Dr. Kenneth S. Hunt, Griffin; Dr. Render Anthony, Griffin; Dr. M. F. Fowler, Atlanta; Dr. Samuel J. Sinkoe, Atlanta; Dr. Stephen T. Brown, Atlanta; Dr. W. B. Emery, Atlanta; Dr. M. L. Boyd, Atlanta; Dr. B. C. Duncan, Atlanta; Dr. Clinton Reed, Atlanta; Dr. Allen H. Bunce, Atlanta; Dr. William Shearouse, Savannah; Dr. J. L. Pittman, Jr., Atlanta; Dr. W. A. Upchurch, Atlanta; Dr. J. Righton Robertson, Augusta; Dr. H. P. McDonald, Atlanta; Dr. Ernest Corn, Macon; Dr. F. C. Nesbit, Atlanta; Dr. W. P. Jordan, Columbus; Dr. A. F. Caldwell, Atlanta; Dr. E. G. Ballenger, Atlanta; Dr. W. C. Hafford, Waycross, and Dr. J. C. Holliday, Athens.

Thus, modern urology was started in Georgia. This association has worked continuously to stimulate interest in urology and to elevate the standards of urological work.

This State has suffered the loss of four distinct personalities in urology, all of whom were members of the original Genito-urinary and Dermatological Society and honored this branch of medicine. They each played a part in the development of urology in Georgia and their loss is keenly felt not only by urologists but by the medical profession as a whole. They were: Dr. A. L. Fowler, Dr. E. P. Merritt, Dr. W. A. Upchurch and Dr. Allen F. Caldwell.

From this paper it would appear that the history of urology in Georgia was made in Atlanta, but when interest in this branch of medicine first became apparent, Atlanta was the only city with sufficient population to allow one to confine his work to this field of endeavor. Members of the medical profession in all parts of the State qualified themselves admirably in whatever urologic work came their way, and it is to be re-

gretted that time does not permit me to delve deeper into their experiences. Today, the development of urology in this section is keeping pace with progress in other parts of the country and competent urologists are to be found throughout the State.

*I am deeply indebted to Dr. W. I. Champion, Dr. M. F. Fowler, Dr. M. K. Bailey, Dr. H. P. McDonald, and Dr. L. W. Shaw for the assistance rendered me in assembling the data given. Information regarding the first urologic operation was obtained from Mrs. W. M. Yarbrough, daughter of the patient.

Special Bulletin of the Atlanta Urological Society, May 29, 1930.

DISSECTING ANEURYSM OF THE AORTA*

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In a given case of arteriosclerosis, the pathologic end-point is usually reached in the lenticulo-striate vessels of the brain, the coronary circulation of the heart, or the cortical arterioles of the kidney. The clinical manifestations are those of a cerebral accident, a cardiac involvement, or of renal failure, as the case may be. All of these conditions present symptoms and signs sufficiently well known to permit a high degree of accuracy in diagnosis. However, if the culmination takes place in the vasa vasorum of the aorta, and there is resulting dissecting aneurysm of the aorta, the symptoms and signs are less widely known, and the diagnosis is rarely made.

Dissecting aneurysm of the aorta presents a clinical paradox. The anatomic changes thus produced are easily among the most striking lesions of the circulatory system, the clinical manifestations are dramatic, and yet the diagnosis has been made during life only with the utmost rarity. In 1929, Gager¹ found a series of 412 reported cases of dissecting aneurysm of the aorta, but only five of these cases had been correctly diagnosed before death. In a series of twenty-nine cases reported since 1929, there were three cases diagnosed before death.^{12 13 14} Other workers have noted two correctly diagnosed cases prior to 1929,^{15 16} and two unreported cases have been correctly diagnosed at Grady Hospital.¹⁷ This gives a series of 445 cases, with twelve antemortem diagnoses, a percentage of about 2.5.

This condition was first described by Mor-

*Read before the Caduceus Society, Emory University School of Medicine.

gagni in 1761. He described a case in a female, 50 years of age, who "cried out, and spoke not another word, but died instantly." On necropsy, it was found that "the blood had by degrees made itself a way through an ulceration in the aortic intima, and had come out under the external coat of the artery; and then by raising it, as a large kind of ecchymosis, and finally by distending it more and more had burst through this external coat in one place, and had poured itself out within the pericardium." The term "dissecting aneurysm" was first used by Manno in 1802, but is usually credited to Laennec, who applied the name in 1826.

As would be expected from a consideration of its etiology, the majority of these cases occur between the ages of 45 and 60. Males are affected twice as frequently as females. The relative rarity of the condition is shown by the fact that in 7,000 necropsies at the Massachusetts General Hospital, a dissecting aneurysm was found in only eighteen cases. Diagnosis was not made in any of these cases.

There are three theories as to the origin of dissecting aneurysm of the aorta.¹⁸ There has been thought to be a traumatic element, due to a sudden rise in blood pressure, as a result of violent muscular effort, or other related factors. Chronic hypertension has been mentioned as an etiologic agent. The third theory of origin is based on pre-existing disease of the intima, media, or both. It has been shown¹¹ that a normal aorta will not give way unless subjected to an intravascular tension of 900 to 1,500 mm. of mercury. Chronic high blood pressure is produced by the same factor producing the cause of the dissecting aneurysm, and is not per se an etiologic factor. It is, therefore, generally conceded that the etiology of dissecting aneurysm of the aorta is disease of the vessel itself.

Disease of the intima is probably not the cause of dissecting aneurysm. Atheromas of the intima may rupture, but the dissection is limited, if present at all, and there is early rupture through the adventitia with death. The basic pathology lies in the media. There is primary rupture and dissection of the media, and the intimal tear is secondary to this. The dissection usually takes place as a

result of the rupture of one or more vasa vasorum into the weakened medial layer. There is dissection before the rupture of the intima takes place.

The original tear is most frequently near the semilunar valves. The dissection occurs within the substance of the media, usually between the outer and middle thirds. Any part of the circumference and length of the aorta may be involved, varying from a few centimeters at one side of the base to a complete separation of the coats throughout the circumference and length of the aorta, with extension along its branches. The branches of the aorta may be torn off, obstructed, thrombosed, dissected, or otherwise involved.

The stage of perforation is reached when the advance of the dissecting column of blood is in any way obstructed. In most instances this rupture occurs externally through the adventitia, and, the majority of dissecting aneurysms involving the first part of the aorta, hemorrhage into the pericardium is by far the most frequent terminal event.

In about 15 per cent of cases, the perforation takes place inward rather than outward. The blood passing out from the lumen of the aorta above, re-enters the lumen below. In this event, the walls of the dissected area become lined with a new intima, and may be strengthened by connective tissue proliferation. The result is a "healed dissecting aneurysm." The patient may then live for many years, and be unconscious of any circulatory defect. Rarely, the dissected area may be obliterated by fibrous tissue.⁵

The greatest contribution to the microscopic pathology of dissecting aneurysm was made by Tyson², and it is due to his work, and to the comments of Kellogg and Heald¹² that the true understanding of the pathology of the condition developed. Tyson found that the most pronounced and constant findings are in the vasa vasorum of the ascending aorta. In the adventitia and loose areolar tissue, these vessels show advanced intimal thickening, with reduction of the size of the lumen, and frequently with occlusion. In the outer half of the media, the thickening is also seen, and there is a cuff of mononuclear leukocytes about the vessel.

As a result of the decreased blood supply, there are degenerative changes in the media.

The muscle fibers are decreased in number, and replaced by fat and collagenous tissue. The elastic fibers are few, and many are broken and frayed. There are broad zones in which the medial tissue has lost its cellular outline, and presents a hyalinized appearance. These changes are most marked in the ascending aorta. These findings were so characteristic, that for a time the condition was considered as almost a disease entity, a dissecting mesaortitis. However, there was little justification for this concept, and the condition is now considered as one of the pathologic end-points of arteriosclerosis.

Many workers have commented on the absence of syphilitic mesaortitis in cases of dissecting aneurysm. It is thought that syphilis rarely, if ever, is the etiologic agent in this condition. The lesions of syphilis in the aorta are more focal in intensity, and lead to a localized rather than a generalized weakness of the wall.

Gager¹ devised a classification of dissecting aneurysm of the aorta, which is valuable in considering the clinical manifestations.

1. Those in whom the rupture of the intima, dissection of the media, and perforation of the adventitia take place within a few seconds or minutes, and death is sudden without previous warning.

2. Those in whom the progress goes on more slowly, the stages are separated by greater intervals of time, and symptoms and signs of disease arise which are susceptible of observation, analysis, and diagnosis. In this group of cases, some element of strain brings on the final event, rupture of the adventitia.

3. Those in whom the dissected channel re-enters the normal passage, and healing takes place. Obliteration of the false passage by thrombosis and replacement fibrosis is rare.

A consideration of the anatomic and pathologic changes taking place in dissecting aneurysm of the aorta suggest that the clinical phenomena may be bewildering and varied. Bedside experience proves this to be true. There are four primary clinical features¹, and when the signs and symptoms are grouped under these heads, much of the bewilderment is dispelled.

1. *The mode of onset.* This is characteristically abrupt. It follows at once, or within

a few hours, many forms of physical stress.

2. *Character, distribution, and duration of the pain.* Pain is the outstanding symptom. It is described as violent, sharp, knife-like, tearing, or rending, and is terrific in its intensity. It is usually precordial, but its segmental distribution is likely to be higher than the pain of coronary disease. Its radiation may be down the outer, rather than the inner side of the arm. It is constant and continuous, and morphine alone will give relief. With the progress of the dissection, there is pain in the back, in the abdomen, in the lumbar or sacral region, and even running down the leg.

It has been suggested¹¹ that the impression that there is always pain is false. Wood and his associates collected a series of ten cases from the literature in which there was no mention of pain. They suggest that this is due to the fact that distention of the adventitia causes dyspnea and that the pain is produced only when there is hemorrhage outside of the adventitia.

3. *The occurrence of abnormal circulatory phenomena.* Among these are various harsh, rumbling, or hissing systolic murmurs heard over the heart and great vessels. The pulses are frequently unequal, or absent, in various regions. Bilateral blood pressure readings are helpful. Often one limb or part of a limb may become cool and pallid, and even gangrene may develop.

4. *Effects of disturbances of circulation in other organs or systems.* There may be complete obstruction of the carotid circulation with encephalomalacia, hemiplegia, and death. The coronary circulation is less frequently interrupted. There may be sufficient compression of the renal arteries to produce anuria. Cases in which there was paralysis as a result of interference with the blood supply of the spinal cord have been noted.

Many other findings may be present in individual cases. There may be pain between the shoulder blades at the onset. The pain may be largely epigastric, and an acute peritoneal irritation may be suggested. This is especially likely to be seen when the fifth, sixth, and seventh intercostal vessels are involved. One case was reported in which the presenting symptom was difficult swallowing.⁷ In general, the farther along the aorta

the rupture occurs, the less alarming the symptoms.

After several days, the pain is usually partly or completely gone. There is a slight rise in temperature, a leukocytosis, and some degree of anemia. There may be evidence of venous congestion. Cough may be present, and pleural effusion on the left is common. There may be abdominal pain and distention as a result of interference with the blood supply to the celiac ganglion. There may be hematemesis, hemoptysis, or melena. A transient hemoglobinuria has been noted.

Radiologic studies have been made with an attempt to reach a diagnosis from the findings presented.^{3,11,16} In a few cases, the aneurysm is seen along the broadened line of the aorta as a lighter shadow surrounding, and following with fairly even width, the dense central shadow. The appearance of a shadow in the neighborhood of one of the larger vessels is almost pathognomonic, but is rarely seen. Deformity of the supracardiac shadow is usually seen. Pleural effusion on the left and displacement and compression of the trachea may be seen.

The relative infrequency with which diagnosis has been made in this condition is probably dependent on the rarity of the lesion rather than the extreme difficulty of the diagnosis. It is usually not considered in a differential diagnosis. While it may be confused with many conditions, both in the abdomen and thorax, the most frequent differential diagnosis is between dissecting aneurysm and coronary occlusion. The fact that the blood pressure is maintained, the heart action is excellent, and the electrocardiogram is negative will serve to divert suspicion away from the coronary arteries.

If the patient lives long enough to permit a diagnostic study, the prognosis has improved. The mortality within a few minutes of the onset is 65 per cent. Fifteen to twenty per cent of these cases will die within a few days. The remaining cases will survive. The further along the aorta the rupture occurs, the better the prognosis.

Summary

1. Dissecting aneurysm of the aorta has been infrequently recognized during life.
2. The condition is the result of arterio-

sclerotic changes taking place in the vasa vasorum of the aorta.

3. In those cases which survive the initial dissection and rupture, signs and symptoms are presented which are sufficiently characteristic to permit a diagnosis.

4. Diagnosis is based on a consideration of:

- a. The mode of onset.
- b. Character, distribution, and duration of the pain.
- c. The occurrence of abnormal circulatory phenomena.
- d. The effects of disturbances of circulation in other organs or systems.

5. Failure in diagnosis is due to a failure to consider this lesion in differential diagnosis, rather than the difficulty of the diagnosis.

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Edgar A. Kahn, Ann Arbor, Mich. (*Journal A. M. A.*, Jan. 9, 1937), outlines a procedure by which a chronic encapsulated brain abscess can be dealt with more easily. He has shown in his four cases that a brain abscess can migrate to the surface beneath a decompression, in the presence of increased intracranial pressure. In most cases of encapsulated abscess there is nothing to prevent their changing position under certain pressure conditions. Could all abscesses be drained at the surface under circumstances which would minimize the possibility of meningitis, the mortality would undoubtedly diminish.

CORNEAL ULCER AND EPISCLERITIS

REPORT OF CASES

RICHARD M. NELSON, M.D.
Atlanta

The following brief and self-explanatory report is made as a partial answer to the increasing number of inquiries from able and fair-minded doctors in this and neighboring states as to comparable results between tonsillectomy and diathermy obtained by me in what they are so kind as to term my "usual conscientious methods of investigation."

In 1923 I reported in the *Journal of the American Medical Association* a case of iritis and one of corneal ulcer cured by tonsillectomy; the iritis within twenty-four hours, the corneal ulcer within a week. Neither patient had shown any real improvement for several weeks under all other treatment.¹ During the past six years I have used diathermy in selected cases and have obtained results quite comparable with tonsillectomy, with a considerable saving of time, money and suffering to my patients, as indicated by the following examples:

Report of Cases

Mr. K. H., aged 20, single, druggist, consulted me Feb. 26, 1932, for a corneal ulcer of his right eye. For ten days the usual treatments were tried with little improvement. Believing his badly diseased tonsils the cause of the corneal ulcer, I then urged tonsillectomy or diathermy extirpation. To save time and money he chose diathermy. Electro-coagulation was begun with the right tonsil. The next day his eye was better. Then the left tonsil was attacked, and within twenty-four hours the eye was much better; and in another five days he was quite well.

Mr. J. T., aged 27, married, formerly an electrician, now a bookbinder, came to me June 19, 1933, for treatment of transient periodic episcleritis of the left eye, that had recurred annually for three years. Episcleritis being chiefly found in rheumatic or gouty adults, and there being a history of rheumatism, anti-rheumatic remedies were used along with local eye treatment for three days, but with little success. I then began electro-coagulation of his badly diseased tonsils, beginning with the left one. The next day when I attacked the right tonsil I found the left eye had markedly improved, and within another twenty-four hours the episcleritis had vanished. Episcleritis, like rheumatism and gout, is notoriously resistant to the

TREATMENT OF PREMATURE SYSTOLES WITH QUINIDINE AND STRYCHNINE

JOHN E. WALKER, M.D.
Columbus

It is generally known that premature systoles are of themselves not often of serious import. Many patients need merely to be assured of their lack of significance, while others recover completely when such reassurance is combined with a sedative and other simple measures such as the avoidance of excess of coffee or tobacco. Some patients, however, find it difficult to believe that the weird uncomfortable sensations accompanying premature systoles are without medical significance and, if untreated, they may continue as a severe strain on an overwrought nervous system. Secondly, patients are occasionally encountered with organic heart disease in whom premature systoles may be so numerous as to add an additional and useless burden to the already damaged myocardium. These two groups of patients need active treatment directed toward the prevention of the premature systoles, and it is my purpose in this paper to call attention to the fact that the combination of strychnine and a cinchona derivative is an effective treatment for them. The value of this method of treatment does not seem to be generally known, since neither White¹, Lewis², nor Levine³ mention it.

This combination of drugs was introduced by Wenkeback⁴. He observed that both quinine and strychnine were of value in the treatment of premature systoles, but that a combination of the two drugs was of greater value than either alone. He used 5 to 6 grains (0.3 to 0.4 Gm.) of quinine with 1/30 to 1/20 grain (2 to 3 mg.) of strychnine daily over a period of 10 days. He wrote in 1923: "My experience with this treatment since the year 1915 has been so favorable that I am convinced that whoever will try it will come to the same conclusion."

Carter and Traut⁵ retested this combination, using however, quinidine instead of quinine. On long observations, they found that the combination of 1/30 grain of strychnine sulphate and 3 grains of quinidine sulphate three times a day was more ef-

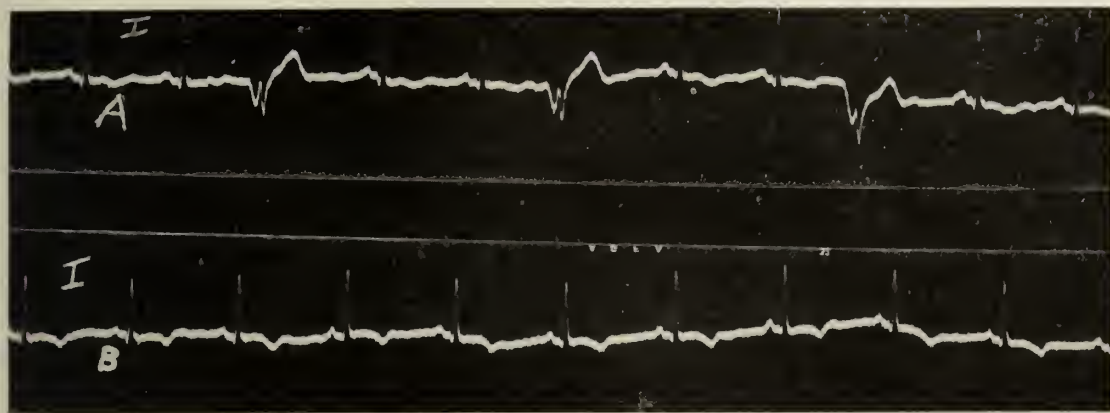


Figure 1. Electrocardiographic tracings. A: Jan. 24, 1936, showing a premature systole occurring every 3rd contraction. B: Jan. 31, 1936, showing absence of premature systoles after taking quinidine and strychnine. Both tracings are Lead I.

fective than either drug given alone or in combination in smaller doses, and also more effective than digitalis or sedatives.

Figure 1 shows electrocardiographic tracings of a patient seen by me. This was a man, aged 70, able to carry on his sedentary occupation as a watchman despite moderate hypertension (160/100), evidence of coronary sclerosis, and a history of probable acute coronary thrombosis three years previously. He complained bitterly of a trembling sensation in the region of the heart which extended up into the neck and down into the abdomen. This sensation had been present for two months, and had given rise to increased shortness of breath on exertion, besides constant apprehension of another serious heart attack. He was placed on quinidine and strychnine as outlined by Carter and Traut, and returned three days later without clinical or electrocardiographic evidence of premature systoles. He stated that there was complete cessation of the trembling sensation. A recurrence of premature systoles a month later was treated in the same manner, again with cessation of the arrhythmia.

I have used the drugs with favorable results in additional instances where success was not obtained with other measures. Some patients have preferred to discontinue the treatment after observing its beneficial effect, apparently being doubly assured of the innocence of premature systoles merely by the knowledge that they could be controlled at any time by simple drug therapy.

Carter and Traut observed no ill effects from the quinidine. Nor have I. However, because occasional idiosyncracies to quinidine

may be encountered. I have preferred to prescribe the drug in capsules containing $1\frac{1}{2}$ grains of quinidine sulphate and $1/60$ grain of strychnine sulphate. One capsule is taken after each meal for three days, after which the dose is increased to two capsules if need be. As a rule, it is necessary to increase to the larger dose, as recommended by Carter and Traut. Sufficient capsules are usually prescribed to last approximately ten days.

Summary

The combination of three grains of quinidine sulphate and $1/30$ grain of strychnine sulphate three times a day is an effective treatment for premature systoles whenever more than reassurance or simple sedative treatment is necessary. The treatment is particularly of value when the premature systoles give rise to marked psychic disturbance, or when they are so numerous as to constitute an additional burden for an already damaged myocardium.

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The Association will meet in the City Auditorium, Macon, May 11, 12, 13, 14, 1937. Hotel Dempsey will be headquarters.

The JOURNAL would like to record the scientific work of Georgia doctors. It earnestly requests, therefore, that each physician in the State who publishes a contribution in some other medical periodical submit an abstract of the article for these columns.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

MARCH, 1937

TREATMENT OF BRONCHIECTASIS

Bronchiectasis is coming to be recognized as the most common chronic pulmonary affection next to tuberculosis. In the milder phases it is often considered a chronic bronchitis; and in most cases, somewhere along the line, a diagnosis of pulmonary tuberculosis is made. The treatment of advanced bronchiectasis has always been most discouraging, but with the advent of collapse therapy and chest surgery the situation has brightened considerably and, in some instances, cures achieved.

In advanced and bilateral cases, the medical treatment alone usually has to be resorted to. This consists of first attempting to improve the general health of the patient by proper food, rest, tonics and sunshine. These individuals prosper better in a warm sunny climate during the rigorous winter. Clearing up foci of infection, notably in the paranasal sinuses and the oral cavity, is important both as a preventive and therapeutically. Proper attention to dental hygiene would go a long way toward eliminating the fusospirochetal form of the disease. Postural drainage is very important, particularly in reducing toxemia and should always be employed. Other measures to be used are: ultraviolet radiation, deodorizing inhalations and vapors, autogenous vaccine and the injection of iodized oils into the bronchial tree. The injection of iodized oil has proved effective and when used with bismuth and arsphenamine therapy has been almost specific in bronchospirochetosis.

In properly selected cases, usually unilateral, pneumothorax, phrenic neurectomy, thoracoplasty and even pneumectomy have achieved brilliant results. Of these, thoracoplasty seems to have accomplished most and is on the ascendency in the treatment of this very serious disorder.

CHAMP H. HOLMES, M.D.

PRURITUS ANI

There is probably no other anorectal problem that causes more concern of the proctologist than pruritus ani. Itching is usually considered as the private domain of the dermatologist, but in the case of pruritus ani it becomes a proctologic problem and often a neurologic or medical problem as well. As has been pointed out by Lord Horder, all the world itches, but for different reasons in different persons.

The factors that cause the pathologic state of itching around the anus are exceedingly numerous and problematic, and may be grouped as constitutional, local and those of unknown origin.

The constitutional causes are: colitis, diabetes, nutrition deficiencies, Hodgkin's disease, uremia, leukemia, jaundice, gout, etc. Local causes are: lack of cleanliness, excessive growth of hair, excessive perspiration, infection (bacterial, parasitic, or fungus), abnormal eversion of the anus, skin tabs, chronic fissure, discharging sinus, condylomas, leakage of mucus caused by prolapse through the external sphincter of internal hemorrhoids, rectal polyp, hypertrophied papillae, or other conditions that bring the rectal mucosa outside the anus.

From a therapeutic standpoint pruritus ani may be classified into three groups: First, the very trifling pruritus that accompanies some local lesion or constitutional condition which will be cured by the cure of the lesion or constitutional condition, requires for the pruritus no particular treatment but a removal or correction of the cause. Second, those cases of idiopathic uncomplicated pruritus or cases which occur in the absence of any discoverable etiologic factor or local lesion. The treatment is directed solely to the pruritus and consists of anti-pruritic medications. If this does not relieve the itching and the complaint becomes intolerable, the destruction of the nerve supply to the involved area by the injection of alcohol is indicated. Third, the type of patient in whom there was a primary etiologic factor, or idiopathic in origin, who has an obstinate pruritus followed with local associated complicated lesions which have become secondary etiologic factors. In this group the treatment should be directed toward the removal of the primary

cause, relief of the pruritus by alcohol injection and the surgical removal of the associated complicated local lesions.

The injection of the so-called prolonged anesthetic agents is of little value. The most that can be offered at the present time in the idiopathic obstinate case without any other associated local lesions is to destroy by alcohol injection the sensory nerves to the involved area so that the patient may have relief of the itching at least until regeneration of the nerves occur. In many patients this relief is permanent, and the treatment may be repeated as often as is necessary for relief of itching.

Patients with pruritus ani should not be treated slightly. They are due professional sympathy and a persistent, continued effort to determine and remove the cause.

MARION C. PRUITT, M.D.

HIGH CARBOHYDRATE DIET AND INSULIN IN THE TREATMENT OF CIRRHOSIS OF THE LIVER

The treatment of cirrhosis of the liver has consisted principally of repeated paracenteses. Salyrgan, mercupurin, or mercurin suppositories may render the necessity of paracentesis less frequent, though diuretics are not nearly so effective in this disease as in cardiac dropsy. The treatment of cirrhosis of the liver has been in general so unsatisfactory that any measure of promise should be given a thorough trial. The liver possesses marked powers of regeneration and therefore the problem should not be considered necessarily hopeless.

Experiments have shown that a high glycogen content of the liver greatly increases the resistance of animals to specific liver poisons, such as chloroform, carbon tetrachloride and phosphorus. The glycogen content of the liver can of course be increased by diets rich in carbohydrates. This has been a valuable lead in the treatment of diseases of the liver. Surgeons have been quick to follow it and they invariably precede operative procedures on the biliary tract by the forced feeding of carbohydrate or by injections of dextrose.

Such a diet is also generally believed to be indicated in cirrhosis of the liver, for this disease is presumably the result of a chronic intoxication from alcohol or from some other

unidentified poison. While the results with such a diet have not been particularly brilliant, the method of treatment rests on such sound experimental evidence that it should doubtlessly be used in every case of cirrhosis of the liver. Supplementing the average diet with 750 c.c. of fruit juice and 150 Gm. of dextrose daily will answer the purpose.

Efforts have been made to improve the efficacy of the high carbohydrate diet by the administration of insulin. The theoretic basis for this additional measure is somewhat controversial and the judgment of its value must rest solely upon clinical observation. Insulin has been used in Europe for several years as an adjunct to the high carbohydrate diet. McCabe and Hart in this country have been impressed with its value and have reported several instances where the patients have improved to the point of being able to discontinue paracenteses. Walker has reported a similar observation in the *Journal of the American Medical Association* for July 20, 1935. Instances of spontaneous cessation of the accumulation of ascitic fluid are so rare that it seems highly probable that the course of the disease in these patients was favorably influenced by insulin. The true value of the method can be ascertained only by observations on a number of patients who have received 30 to 45 units of insulin daily for a period of at least three months.

JOHN E. WALKER, M.D.

CORNEAL ULCER AND EPISCLERITIS REPORT OF CASES

(Continued from Page 112)

older methods of treatment and very prone to recurrences thereafter.

From all reports received, both patients continue in excellent health in every way to the present time, September 25, 1936.

Although complete tonsillar extirpation requires about two months, the eye symptoms cleared after the first treatments; probably from the diathermy destroying the infecting organisms then present in the tonsillar crypts as seemingly proved by the interesting clinical and laboratory work of Skillern and associates² at the Post-Graduate Hospital, University of Pennsylvania. In both my cases, extirpation was accomplished without losing a drop of blood, or any time at all from work, without hospitalization, and with only occasional throat discomfort so slight as to never require any change of regular diet.

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GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*THE PAST AND FUTURE OF
COUNTY HEALTH WORK

Recent articles appearing in these columns, by the Division of County Health Work, have dealt with the qualifications of the health officer, as recommended by the Conference of State and Territorial Health Officers. The qualifications demanded of the health officer require him to be a trained specialist in public health work. Equally important is the fact that public health nurses and sanitary engineers are required to have special training in public health practice as they make an important contribution to the success of the work of keeping people healthy.

In one recent article, an epitome of the activities of the health officer was given which included the work of his nursing and sanitary assistants. In this article it was shown that the work of the health department includes guarding the health of the individual throughout his life, beginning with prenatal care and following him through the periods of infancy, preschool and school age. Not stopping here, the efficient health department follows him through college and into business life to teach him how to put off, as long as possible, the degenerative diseases of old age.

About two years ago this column told of the effects upon the practice of the physicians of Cass County, North Dakota, following five years of intensive health work in that county. This article pointed out that the physicians had an increase in the number of prenatal, infant, preschool and school age patients reporting to their office for corrections. Probably more significant is the fact that a greater number of adults reported for periodic health examinations, although this was primarily a child health demonstration.

Now, two years after this report, it may be well for us to take stock in our own State and view the results that are state-wide in character. During this two year period, the Medical Association of Georgia has pointed out the way for other State associations by agreeing upon and adopting policies for a public health program acceptable to all agencies.

The general public has been very appreciative of this unselfish attitude of the physicians and has responded to their teachings and to the work of the public health department in a most satisfactory manner.

A few days ago a prominent layman was said to have made the statement that the

people of Georgia are more health-minded today than ever in the history of the State. Records in the State Department of Health bear this out for every division of the department is being called upon to render more service to the people than is possible with the limited personnel available at this time. The people and officials of the various counties are definitely committed to a real health program. This is evidenced by the fact that the Division of County Health Work, during the last year or more, has been called upon for information relative to the establishment of the work to a greater extent than in any period in the history of the State Department. The people not only want information concerning the establishment of the work, but they are taking advantage of the opportunities offered.

The first county health department was established in 1915 and during that year two county health departments were organized. In 1918 seven counties had been organized; this number was practically doubled during the next year. After the present health laws had been in operation for ten years, only twenty-one counties had organized departments of health. Ten years later, thirty-six counties had organized health work, which number during the depression was reduced to thirty-one. At the time this is written, the total number of counties that have adopted budgets and will have departments in operation as soon as personnel can be secured has been increased to forty-three, comprising something over fifty-two per cent of the total population of the State. Indications now are that at least twelve other counties will adopt budgets and begin operation sometime during 1937. When these counties begin operation, it will mean that about sixty-five per cent of the population of the State will have some form of health protection.

To a large extent, this increase in county health work is the result of subsidies offered to counties from funds made available through the Social Security Act. Indications at this time seem to be that the Legislature will, for the first time in its history, make an appropriation for the purpose of subsidizing county health work. If this is done, it will mean that practically all of the people of Georgia will have the benefit of public health service. When this is accomplished, it will be the direct result of the hearty cooperation and active assistance of physicians.

GUY G. LUNSFORD, M.D.,
Director, County Health Work.

WOMAN'S AUXILIARY

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PRESIDENT'S MESSAGE

To the Auxiliary Members:

The fiscal year is drawing rapidly to a close. May 11th, 12th, 13th, and 14th are the dates set for our Annual Convention, which will be held in Macon. Your President is asking all officers, chairmen of standing committees, district managers, and county presidents to exert every effort to fulfill "Our Objectives," copies of which were sent to you at the beginning of the year.

We, as doctors' wives, should think seriously and conscientiously, not lightly, of the Medical Auxiliary's duty. Isn't Medical Auxiliary work, the aims most vital to our lives? It is the task of our own husbands and therefore should take first place in our hearts and efforts. It should be the object that we should be most interested in, and for which we should exert our energy, time and ability.

Each county auxiliary, whether large or small, has a part in these plans of the State Auxiliary. Should not the wives of the doctors in a county be partly responsible for the health conditions in that county? The doctors are; why should we not support them?

It is hoped each county auxiliary has distributed health literature, and had Public Relation Programs in its community, secured many more subscriptions to the health magazine, Hygeia; used its influence in behalf of the legislative bills supported by the Medical Association of Georgia. Also that health films have been exhibited before the school children, that each county auxiliary has made a substantial donation to the Student Loan Fund, celebrated Doctor's Day, held programs on the heroism of Jane Todd Crawford, and enlisted every doctor's wife as a member of her county auxiliary. Last but not least, please be reminded of your dues, see

that your county treasurer sends in your Auxiliary dues to the State Treasurer not later than March 20th.

Your President anticipates a large attendance at the Convention in Macon. An excellent program has been arranged and it will give her great pleasure to welcome you.

MRS. WILLIAM R. DANCY, *President.*

DOCTORS' DAY

"Whereas, the Woman's Auxiliary wishes to pay lasting tribute to the Doctor, therefore, be it

"Resolved—that March 30, the day that famous Georgian, Dr. Crawford W. Long, first used ether anesthesia in surgery, be adopted as Doctors' Day, its object being to promote the well-being and to honor the medical profession, its observance demanding some act of kindness, gift, or tribute to the doctor."

The above resolution was adopted by the Auxiliary at its annual session in Augusta May 10, 1934. The Georgia Auxiliary introduced this resolution at the meeting of the American Medical Auxiliary in Atlantic City in 1935 and it was adopted.

At all times the Medical Auxiliaries strive to express their appreciation of the medical profession but since a special day has been set aside to honor the Medical Societies it behooves each organization to observe Doctors' Day, March 30, in a fitting manner.

MRS. ERNEST R. HARRIS,
Chairman, Doctors' Day Committee.

Savannah Auxiliary

"Distinguished Physicians of Literature" was the subject chosen by Dr. William Myers for his talk to the Woman's Auxiliary of the Georgia Medical Society at the January meeting, held at the home of Mrs. A. A. Morrison, Sr., in Savannah, with Mrs. A. A. Morrison, Jr., joint hostess. Dr. Myers mentioned the names

of Osler, of medical treatise fame and his distinguished biographer, Harvey Cushing; Sir Thomas Moore, the author of "Religio Medici," a copy of which was clasped in Osler's hand when he was buried; Conan Doyle, Oliver Wendall Holmes and others.

Mrs. William R. Dancy, State President; and Mrs. Lehman Williams reported on the Southern Medical Auxiliary in Baltimore. Mrs. E. N. Gleaton was appointed Hygeia Chairman, succeeding Mrs. Luther DeLoach, who resigned on account of illness. A nominating committee, composed of Mesdames Charles Usher, E. N. Gleaton and C. G. Redmond was appointed. Three new members, Mesdames J. J. Eberhart, Harry Sand and T. H. D. Griffiths, wives of Public Health Service doctors stationed in Savannah, were welcomed.

Plans for Loan Fund

A called meeting of the Woman's Auxiliary to the Georgia Medical Society was held in February at the home of Mrs. Ruskin King. Mrs. John Daniel, Sr., co-hostess, to perfect plans for the group's contribution to the Student Loan Fund. It was decided to assess each member \$1 for this fund.

Plans were also made for observance of Doctors' Day on March 30. Mrs. William Myers, First District Chairman for the day, pledged co-operation. It was voted to have an entertainment on Doctors' Day, with Mrs. Lehman Williams appointed Chairman. Mrs. William Myers is Co-Chairman, others on the committee being Mesdames Joseph Bolten, W. C. Bedingfield, Lee Howard, G. H. Lang, G. T. Olmstead, William R. Dancy and E. C. Demmond.

Mrs. Dancy, State President, read a communication for Dr. James Campbell, Chairman of the Cancer Commission, asking support of the bill now before the Georgia legislature asking an appropriation for the care and treatment of needy cancer cases. A musical program was given, Mrs. William Myers playing and singing her recently published "Oshteh Buyer" and Miss Marjorie Garvin singing, accompanied by Mrs. Ruskin King.

Fulton County Auxiliary

The Woman's Auxiliary to the Fulton County Medical Society heard two most interesting addresses at the January and February meetings. Mrs. Fred Hodgson, Citizenship Chairman, talking at the first meeting and Miss Loretta Chapman talking at the second. Mrs. Hodgson, who has just returned from a trip to Korea, discussed citizenship and health conditions in the Orient in a most entertaining manner. Miss Chapman, supervisor of child welfare on the State Board of Welfare, brought a most instructive message about her work.

The Auxiliary is enjoying an innovation this year, under the capable direction of the President, Mrs. Charles E. Boynton, in having a luncheon follow each meeting. These luncheons were planned with an idea of bringing the membership closer together and they have proven most admirable in this respect. Plans were made for the reception at which the Auxiliary entertains, honoring the new officers of the Medical Society at the Druid Hills Golf Club on March 3, Mrs. Leland Baggett, chairman.

Richmond County

The Woman's Auxiliary to the Richmond County Medical Society recently sponsored a delightful benefit bridge party at the Doughty Nurses Home in Augusta, the proceeds going to the Student Loan Fund. The Auxiliary held an interesting meeting on January 19 at the home of Mrs. M. E. Mathews.

Members Honored

Mrs. Lee Howard, member of the Auxiliary to the Georgia Medical Society, has recently been made a member of the Board of Education of Chatham County. Mrs. Julian K. Quattlebaum, another Auxiliary member, is also a representative on the board and the retiring woman member was Mrs. T. P. Waring, another Auxiliary member, who had served the time limit and was not eligible for re-appointment. These three doctors' wives are the only women to have served on the board, with the exception of Mrs. Willis Heard, Assistant Superintendent of Schools, who serves the board as Secretary.

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Burns, Mrs. J. K., Jr., Gainesville
 Davis, Mrs. B. B., Gainesville
 Downey, Mrs. J. H., Gainesville
 Garner, Mrs. W. R., Gainesville
 Hodges, Mrs. L. W., Gainesville
 Joiner, Mrs. Hartwell, Gainesville
 Meeks, Mrs. J. L., Gainesville
 Phillips, Mrs. H. K., Helen
 Ward, Mrs. E. L., Gainesville
 Whelchel, Mrs. C. D., Gainesville

STEPHENS COUNTY

Officer

President—Mrs. Bruce Schaefer, Toccoa

Members

Ayers, Mrs. Clarence L., Toccoa
 Chaffin, Mrs. Emory F., Toccoa
 Heller, Mrs. Walter B., Toccoa
 Isbell, Mrs. J. E. D., Toccoa
 Schaefer, Mrs. Bruce, Toccoa

TENTH DISTRICT

CLARKE COUNTY

Officers

President—Mrs. H. G. Banister, Ila
 Treasurer—Mrs. H. M. Fullilove, Athens

Members

Banister, Mrs. H. G., Ila
 Brown, Mrs. Stewart, Royston
 Birdsong, Mrs. H. W., 150 University Dr., Athens
 Bryant, Mrs. C. H., Comer
 Cabaniss, Mrs. Harvey, Jefferson Rd., Athens
 Canning, Mrs. G. T., Prince Ave., Athens
 Decker, Mrs. C. J., Milledge Circle, Athens
 Dupree, Mrs. Dan H., 745 Milledge Ave., Athens

Fullilove, Mrs. H. M., Milledge Ave., Athens
 Goss, Mrs. R. M., 687 Milledge Ave., Athens
 Gholston, Mrs. W. D., Danielsville
 Holliday, Mrs. A. C., University Dr., Athens
 Holliday, Mrs. Paul, Prince Ave., Athens
 Kelley, Mrs. G. W., Carlton
 Hubert, Mrs. M. A., Milledge Circle Apts., Athens
 Loden, Mrs. G. L., Colbert
 McKinney, Mrs. J. C., 275 Baxter St., Athens
 Reynolds, Mrs. H. I., Hampton Court, Athens
 Smith, Mrs. S. S., 135 Prince Ave., Athens
 Whelchel, Mrs. G. O., 138 Henderson Ave., Athens
 Whitley, Mrs. L. L., Crawford
 Westbrook, Mrs. R. J., Ila

ELBERT COUNTY

Officer

President—Mrs. D. V. Bailey, Elberton

Members

Bailey, Mrs. D. V., Elberton
 Johnson, Mrs. W. A., Elberton
 Thompson, Mrs. D. N., Elberton
 Smith, Mrs. A. C., Elberton

HART COUNTY

Officer

President—Mrs. B. C. Teasley, Hartwell

Members

Harper, Mrs. George, Dewey Rose
 Jenkins, Mrs. James C., Hartwell
 Jenkins, Mrs. Joe I., Bowman
 McCurry, Mrs. W. Edgar, Hartwell
 Meredith, Mrs. A. O., Hartwell
 Teasley, Mrs. B. C., Hartwell

RICHMOND COUNTY

Officers

President—Mrs. Robert B. Crichton, Augusta
 First Vice-President—Mrs. W. K. Philpot, Augusta
 Second Vice-President—Mrs. Ralph H. Chaney, Augusta
 Third Vice-President—Mrs. G. Lombard Kelley, Augusta
 Rec. Secretary—Mrs. C. M. Burpee, Augusta
 Cor. Secretary—Mrs. Robert C. McGahee, Augusta
 Treasurer—Mrs. Victor Roule, Jr., Augusta
 Historian—Mrs. W. W. Battey, Sr., Augusta

Members

Akerman, Mrs. Joseph, 831 15th St., Augusta
 Battey, Mrs. William W., Sr., 428 Sixth St., Augusta
 Battey, Mrs. William W., Jr., 2239 King's Way, Augusta
 Bernard, Mrs. G. T., 951 Meigs St., Augusta
 Brittingham, Mrs. John W., 2003½ Hampton St., Augusta
 Burpee, Mrs. C. M., 1127 Monte Sano Ave., Augusta
 Chaney, Mrs. Ralph H., Forest Hills, Augusta
 Crichton, Mrs. Robert B., 1538 Wrightsboro Rd., Augusta
 Collison, Mrs. H. Grady, Columbia, S. C.
 Gray, Mrs. J. D., George Walton Apts., Augusta
 Kelly, Mrs. G. Lombard, 1001 Russell St., Augusta
 Lee, Mrs. Frank L., 901 Heard Ave., Augusta
 Mathews, Mrs. Walter E., 2804 Lombardy Center, Augusta
 Mealing, Mrs. Henry G., Rt. 3, Augusta
 McGahee, Mrs. Robert C., 2633 Raymond Ave., Augusta
 Milligan, Mrs. King W., 942 Greene St., Augusta
 Philpot, Mrs. William K., 2151 King's Way, Augusta
 Rhodes, Mrs. Robert L., 2501 Belleview Ave., Augusta
 Roule, Mrs. Jules Victor, Jr., 931 Heard Ave., Augusta
 Sanderson, Mrs. Everett S., 2257 Oglethorpe Ave., Augusta
 Sherman, Mrs. John H., 1122 Johns Rd., Augusta
 Sydenstricker, Mrs. V. P., 2110 Gardner St., Augusta
 Traylor, Mrs. George, 2311 King's Way, Augusta
 Tessier, Mrs. Louie P., 933 Hickman Rd., Augusta
 Tessier, Mrs. Claude Edward, 933 Hickman Rd., Augusta
 Wade, Mrs. A. C., 1207 John's Rd., Augusta
 Woods, Mrs. E. B., Milledge Rd., Augusta
 Wright, Mrs. Peter B., Forest Hills, Augusta

WALTON COUNTY

Officer

President—Mrs. W. H. Lott, Monroe

Members

Lott, Mrs. W. H., Monroe
 Stewart, Mrs. Philip R., Monroe

ST. LOUIS MEDICAL SOCIETY TO CELEBRATE

The St. Louis Medical Society, St. Louis, Missouri, will celebrate its one hundredth anniversary, April 5, 6, 7, 1937. The meetings will be held in the Society's Building and the program consists of: April 5th—Salutation, Reenactment of the First Meeting as portrayed from the original minutes in the Archives of the St. Louis Medical Society; History of the St. Louis Medical Society; Aims and Accomplishments

of Medical Societies and Ours in Particular. April 6th—Medical Progress in the Last One Hundred Years; Our Library; Play. Mushrooms Coming Up by the Woman's Auxiliary; April 7th—Centennial Dinner; The Art of Medicine; The Great Physician; The Doctor and the State; followed by dance. The memorabilia of the Society will be on exhibition at the home of the St. Louis Medical Society, 3839 Lindell Boulevard, St. Louis, from 10:00 A. M. to 5:00 P. M., April 5th to 8th, inclusive, and to noon, April 9th.

COUNTIES REPORTING FOR 1937

Rockdale County Medical Society

The Rockdale County Medical Society announces the following officers for 1937:

President—P. S. Smith, Conyers.
Vice-President—S. A. Ware, Conyers.
Secretary-Treasurer—H. E. Griggs, Conyers.
Delegate—P. J. Brown, Conyers.

Dooly County Medical Society

The Dooly County Medical Society announces the following officers for 1937:

President—V. L. Harris, Pinehurst.
Vice-President—M. L. Malloy, Vienna.
Delegate—E. B. Davis, Byromville.

Wilkes County Medical Society

The Wilkes County Medical Society announces the following officers for 1937:

President—C. E. Wills, Washington.
Vice-President—H. M. Sale, Sharon.
Secretary-Treasurer—A. W. Simpson, Washington.
Delegate—H. L. Cheeves, Union Point.
Alternate Delegate—A. W. Simpson, Washington.
Censors—H. T. Harriss and H. M. Sale.

Decatur-Seminole Counties Medical Society

The Decatur-Seminole Counties Medical Society announces the following officers for 1937:

President—L. W. Willis, Bainbridge.
Vice-President—Carl B. Welch, Attapulugus.
Secretary-Treasurer—M. A. Ehrlich, Bainbridge.
Delegate—R. F. Wheat, Bainbridge.

Fulton County Medical Society

The Fulton County Medical Society announces the following officers for 1937:

President—H. Cliff Sauls, Atlanta.
President-Elect—C. C. Aven, Atlanta.
Vice-President—J. Harry Rogers, Atlanta.
Secretary-Treasurer—M. T. Harrison, Atlanta.
Delegate—H. Cliff Sauls, Atlanta.
Delegate—C. C. Aven, Atlanta.
Delegate—C. W. Strickler, Atlanta.
Delegate—Ed H. Greene, Atlanta.
Delegate—B. Russell Burke, Atlanta.
Delegate—Everett L. Bishop, Atlanta.
Delegate—T. C. Davison, Atlanta.
Delegate—Jas. J. Clark, Atlanta.
Delegate—C. C. Aven, Atlanta (Elected, 1935).
Alternate Delegate—Lewis M. Gaines, Atlanta.
Alternate Delegate—C. W. Roberts, Atlanta.
Alternate Delegate—Geo. W. Fuller, Atlanta.
Alternate Delegate—B. T. Beasley, Atlanta.
Alternate Delegate—Dan C. Elkin, Atlanta.
Alternate Delegate—John B. Fitts, Atlanta.
Alternate Delegate—Avery M. Dimmock, Atlanta.
Alternate Delegate—Champ H. Holmes, Atlanta.
Alternate Delegate—M. T. Harrison, Atlanta.

Hancock County Medical Society

The Hancock County Medical Society announces the following officers for 1937:

President—Horace Darden, Sparta.
Secretary-Treasurer—H. L. Earl, Sparta.
Delegate—C. S. Jernigan, Sparta.
Alternate Delegate—E. H. Hutchings, Sparta.

Whitfield County Medical Society

The Whitfield County Medical Society announces the following officers for 1937:

President—J. H. Steed, Dalton.
Vice-President—G. L. Broadrick, Dalton.
Secretary-Treasurer—H. J. Ault, Dalton.
Delegate—D. L. Wood, Dalton.
Censors—H. L. Sams, G. L. Broadrick and J. C. Rollins.

Polk County Medical Society

The Polk County Medical Society announces the following officers for 1937:

President—Seals L. Whitely, Cedartown.
Vice-President—Chas. V. Wood, Cedartown.
Secretary-Treasurer—John M. McGehee, Cedartown.
Delegate—John M. McGehee, Cedartown.
Alternate Delegate—Chas. V. Wood, Cedartown.
Censors—John W. Good, P. O. Chaudron and J. J. Cooper.

Washington County Medical Society

The Washington County Medical Society announces the following officers for 1937:

President—O. D. Lennard, Tennille.
Vice-President—S. B. Malone, Sandersville.
Secretary-Treasurer—W. M. Cason, Sandersville.
Delegate—N. J. Newsom, Sandersville.
Alternate Delegate—R. L. Taylor, Davisboro.

Gordon County Medical Society

The Gordon County Medical Society announces the following officers for 1937:

President—W. R. Barnett, Calhoun.
Secretary-Treasurer—Z. V. Johnston, Calhoun.

Cobb County Medical Society

The Cobb County Medical Society announces the following officers for 1937:

President—W. C. Mitchell, Smyrna.
Vice-President—H. B. Terry, Acworth.
Secretary-Treasurer—J. E. Lester, Marietta.
Delegate—W. G. Crawley, Jr., Acworth.
Alternate Delegate—W. M. Gober, Marietta.

Jefferson County Medical Society

The Jefferson County Medical Society announces the following officers for 1937:

President—J. D. Peacock, Wadley.
Vice-President—Jno. J. Pilcher, Wrens.
Secretary-Treasurer—S. T. R. Revell, Louisville.
Delegate—S. T. R. Revell, Louisville.
Alternate Delegate—J. D. Peacock, Wadley.

Warren County Medical Society

The Warren County Medical Society announces the following officers for 1937:

President—H. B. Cason, Jr., Warrenton.
Secretary-Treasurer—A. W. Davis, Warrenton.

Delegate—H. B. Cason, Jr., Warrenton.
 Alternate Delegate—A. W. Davis, Warrenton.

Meriwether and Harris County Medical Society

The Meriwether and Harris County Medical Society announces the following officers for 1937:

President—V. H. Bennett, Gay.
 Vice-President—W. P. Allen, Woodbury.
 Secretary-Treasurer—R. B. Gilbert, Greenville.

Ben Hill County Medical Society

The Ben Hill County Medical Society announces the following officers for 1937:

President—R. M. Ware, Fitzgerald.
 Vice-President—W. P. Coffee, Fitzgerald.
 Secretary-Treasurer—L. S. Osborne, Fitzgerald.
 Delegate—Lewis Abram, Fitzgerald.
 Alternate Delegate—D. B. Ware, Fitzgerald.

NEWS ITEMS

DR. AND MRS. RUFUS EVANS, Stone Mountain, entertained the members of the DeKalb County Medical Society at supper on February 5th in their home.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at Patterson's Hospital, Cuthbert, on February 4th. Dr. F. M. Martin, Shellman, read a paper on *Pneumonia*.

THE HALL COUNTY MEDICAL SOCIETY met at Gainesville on February 3rd. The owners of Downey Hospital at Gainesville offered through the Society to sell the institution to Hall county to be remodeled and organized as a new County Hospital, then to be owned and operated by the county as an open hospital.

DR. PHILIP STEWART AND DR. A. M. LOGAN, Monroe, were elected to the Board of Trustees of the Walton County Hospital at a recent meeting.

THE ANNUAL MEETING of the staff of St. Joseph's Infirmary, Atlanta, was held on January 26th. Officers elected were: Dr. W. C. Waters, President; Dr. Stephen T. Barnett, Jr., Vice-President; Dr. Don F. Cathcart, Secretary.

DR. V. C. DAVES AND DR. M. L. MALLOY have been appointed members of the Vienna Board of Health.

DR. AND MRS. H. E. CROW, Alto, entertained the members of the Habersham County Medical Society and Auxiliary in their home on January 20th.

THE TRUSTEES of the John D. Archbold Memorial Hospital, Thomasville, held their annual meeting on January 28th. Dr. Fletcher H. Brooks was re-elected Secretary-Treasurer and will continue in charge of the operation of the Hospital. The institution was built ten years ago by John F. Archbold as a memorial to his father, John D. Archbold, at a cost of one million dollars.

DR. GUY CHAPPELL, Dawson Health Officer, was supplied with funds as a gift for the welfare of Dawson people by Hon. T. B. Raines to purchase an oxygen tent for the use of patients who may need such equipment.

THE STAFF MEETING of the Crawford W. Long Memorial Hospital, Atlanta, was held on February 11th. The program consisted of case report, *Internal Biliary Fistula, Complicated by Obstruction* by Dr. Chas. E. Rushin; discussion of mortalities by the staff; *Modern Methods of Anesthesia* shown by moving picture.

DR. AND MRS. W. D. TRAVIS, Covington, entertained the physicians of Newton County in their home to supper in January. It was a business as well as a social meeting. The problems of the physicians and the welfare of the people were discussed. DR. LUKE ROBINSON, Covington, entertained them at Hotel Delaney on February 2nd.

DR. AND MRS. CHAS. W. STEPHENSON, Ringgold, entertained the physicians of Walker and Catoosa Counties to dinner in their home recently.

THE GRADY COUNTY MEDICAL SOCIETY in cooperation with the State Board of Health conducted a Tuberculosis Clinic at Cairo on February 8th.

THE BROOKS COUNTY BOARD OF HEALTH sponsored and organized an Advisory Board which consists of all the presidents of civic, fraternal and patriotic organizations in the county. The object of the organization is to extend the health work by having the suggestions and advice of the New Advisory Board.

DR. GUY G. LUNSFORD, State Department of Public Health, spoke before a public meeting in the Clarksville Auditorium on the Ellis Health Law, February 3rd. The Habersham County P.-T. Association Council sponsored the meeting.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY held its February meeting in the office of Dr. C. B. Lord, Jefferson.

THE TELFAIR COUNTY MEDICAL SOCIETY and the State Department of Public Health conducted Chest Clinics at McRae on March 18th.

THE WALKER COUNTY MEDICAL SOCIETY met in the office of Dr. Fred H. Simonton, Chickamauga, on February 1st. Dr. Chas. W. Stephenson, Ringgold, spoke on the *Treatment of Varicose Veins*. The March meeting was held in the office of Dr. B. C. Hale, Rossville.

DR. ARTHUR C. PRIMROSE, Americus, entertained the directors of the Americus Kiwanis Club at a dinner party on February 4th.

DR. W. H. LEWIS, Rome, was guest speaker at the Cartersville Lions Club on February 2nd.

DR. DAN C. ELKIN, Atlanta, has been elected President of the Grady Hospital staff; DR. THOS. P. GOODWYN, Vice-President; DR. C. W. STRICKLER, JR., Secretary-Treasurer.

DR. B. H. MINCHEW, Waycross, President of the Association, was the principal speaker at the annual banquet of the Georgia Medical Society held at Oglethorpe Club, Savannah, on February 9th. He discussed the Association's legislative program.

THE STAFF MEETING of the Georgia Baptist Hospital, Atlanta, was held in the Nurses' Dining Room on February 16th. The program was in charge of Dr. Joseph Yampolsky, Chairman of the Clinico-Pathological Committee.

DR. T. STERLING CLAIBORNE announces the opening of his office in Suite 911 Medical Arts Building, Atlanta, for the practice of internal medicine.

DR. HUGH MCCULLOH, West Point, spoke before a meeting of the West Point Rotary Club on February 11th. He discussed preventative medicine, gave a brief history of preventative medicine in Europe and the United States, also explained many of the methods used.

THE CRISP COUNTY MEDICAL SOCIETY met in the office of Dr. Charles Adams, Cordele, on February 15th.

DR. W. P. ELLIS, Chipley, entertained the members of the Meriwether County Medical Society and Troup County Medical Society at a banquet on February 1st.

DR. H. G. HUEY, Homerville, entertained the members of the Ware County Medical Society and Woman's Auxiliary at the Homerville Club on February 3rd.

THE STAFF MEETING of St. Joseph's Infirmary, Atlanta, was held on February 23rd. Dr. W. Pope Baker spoke on *Deep Therapy*; Dr. John Funke, *Ruptured Heart*; Dr. L. Dobson, *Oxygen Therapy Equipment*.

THE GEORGIA MEDICAL SOCIETY, Savannah, (Chatham County) met on February 23rd. Dr. Julian K. Quattlebaum read a paper entitled *Tuberculous Cystitis; Uretero-Intestinal Anastomosis*; discussed by Dr. M. J. Epting. Case report, *Cardiac Decompensation with Marked Edema* by Dr. Shelton P. Sanford.

DR. LEMARTINE GRIFFIN HARDMAN (deceased), Commerce, was a continuous and active paid member of the Medical Association of Georgia for fifty-nine (59) years. He was the first and only physician to be Governor of Georgia. If anyone knows of a physician who has a similar or better record of membership, will you please write the Secretary-Treasurer.

THE OFFICE OF THE ASSOCIATION has numbers of inquiries for physicians to locate in various and widely scattered places in the State. If interested, write the Secretary-Treasurer.

DR. JOSEPH AKERMAN, Augusta, Professor of Obstetrics at the University of Georgia School of Medicine, spoke before a meeting of the Richmond County Medical Society, February 18th, on *Medical History*. The discussion was led by DR. EUGENE E. MURPHY and DR. HENRY M. MICHEL.

THE BULLOCH-CANDLER-EVANS COUNTIES MEDICAL SOCIETY met at the Metter Sanitarium, Metter, on February 10th. The members of the Society and

Auxiliary enjoyed a shad supper at the Green Dot Cafe.

DR. L. P. LONGINO has been appointed superintendent of the Milledgeville State Hospital and will continue in charge during the absence of DR. JOHN W. ODEN, who is ill.

THE EMORY UNIVERSITY HOSPITAL STAFF meeting was held on March 1st. The program consisted of case report, *Pure Fibroma of the Ovary* by Dr. J. F. Denton and Dr. T. R. Staton. *Symposium on Thyroid Gland* and subjects for each discussion were: *Surgical Treatment of Thyrotoxicosis—Presentation of Cases* by Dr. Daniel C. Elkin; *Medical Aspects*, Dr. C. W. Strickler, Sr.; *Postoperative Complications*, Dr. D. Henry Poer; *Roentgenological Aspects*, Dr. Jas. J. Clark; *Pathology*, Dr. Roy R. Kracks.

THE SOUTHEASTERN SURGICAL CONGRESS held its eighth annual assembly at Charlotte, North Carolina, March 8, 9, 10. Dr. Frank K. Boland and Dr. Marion C. Pruitt, both of Atlanta, were on the program. Georgia surgeons who attended from Atlanta were—T. B. Armstrong, Hulett H. Askew, L. G. Baggett, Edgar G. Ballenger, F. M. Barfield, N. B. Bateman, Jr., J. C. Blalock, Stephen T. Brown, Frank K. Boland, B. Russell Burke, J. R. Childs, LeRoy W. Childs, Grady E. Clay, Ben Hill Clifton, Olin S. Cofer, Herschel Crawford, S. C. Davis, T. C. Davison, W. S. Dorrough, W. B. DuVall, Murdock Euen, Geo. F. Eubanks, E. F. Fincher, Jr., L. C. Fischer, Earl Floyd, J. T. Floyd, Arthur G. Fort, Geo. W. Fuller, S. D. Gausemel, Thos. P. Goodwyn, Wm. G. Hamm, E. D. Highsmith, Walter R. Holmes, Conway Hunter, Spencer A. Kirkland, O. H. Matthews, R. H. McClung, Calhoun McDougall, Hal C. Miller, R. E. Newberry, Jas. L. Pittman, H. S. Phillips, D. Henry Poer, G. W. Quillion, W. E. Quillion, Julian G. Riley, C. W. Roberts, L. C. Rouglin, Fred F. Rudder, Chas. E. Rushin, Dan Y. Sage, J. Calvin Sandison, W. A. Selman, Lawson Thornton, John W. Turner, Calvin Weaver, W. Frank Wells, Ed. S. Wright, Jesse H. York; *Macon*—W. L. Bazemore, Chas. C. Harrold, Chas. H. Richardson and A. R. Rozar; *Savannah*—L. B. Dunn, C. F. Holton, A. A. Morrison and Julian K. Quattlebaum; *Augusta*—W. W. Battey, Geo. A. Traylor and E. A. Wilcox; *Milledgeville*—Richard Binion and W. M. Scott; *Valdosta*—Frank Bird and A. G. Little; *Athens*—H. W. Birdsong and M. A. Hubert; *Americus*—E. B. Anderson, B. T. Wise and S. P. Wise; *Gainesville*—J. K. Burns, J. H. Downey and C. D. Whelchel; *LaGrange*—Enoch Callaway; *Thomaston*—Jno. D. Blackburn; *Columbus*—Wm. L. Cooke; *Bainbridge*—Gordon Chason; *Canton*—Grady N. Coker; *Eastman*—Warren A. Coleman and J. Cox Wall; *Millen*—Cleveland Thompson; *Swainsboro*—R. C. Franklin; *Griffin*—A. H. Frye and Kenneth S. Hunt; *Brunswick*—C. B. Greer; *Albany*—A. H. Hisman and F. K. Neill; *Rome*—J. T. McCall; *Waycross*—B. H. Minchew; *Statesboro*—A. J. Mooney; *Cuthbert*—J. C. Patterson; *Thomasville*—C. K. Wall; *Fitzgerald*—D. B. Ware; *Washington*—C. E. Wills.

DR. ALBERT FLEMING AND DR. JAS. L. SAWYER, Folkston, entertained members of the Ware County Medical Society to a shad supper at Bank's Cafe in Folkston on March 3rd.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on February 24th. Dr. H. J. Goodwin, Douglas, read a paper entitled *The Treatment of Coronary Artery Thrombosis*; Dr. T. H. Johnston, Douglas, *The Ketogenic Diet in Urinary Infections*. Dr. L. W. Pierce, Waycross, was an invited guest and speaker.

THE FULTON COUNTY MEDICAL SOCIETY met at the Academy of Medicine, Atlanta, March 4th. Dr. Everett L. Bishop, *Presented a Specimen*; Dr. Linton M. Smith presented patient, *Streptococcal Infection Apparently Cured with Prontosil*; Dr. Calhoun McDougall and Dr. Ed. S. Wright reported a case, *Sinus Thrombosis, Right, Following Mastoiditis, Same on Left Side One Year Previous*; Dr. O. O. Fanning made a clinical talk, *Influenza, Complications and Treatment*; Dr. J. D. Martin, Jr., read a paper, *Congenital Anomalies of the Small Intestine*; the discussions were led by Dr. Geo. A. Williams, Dr. Don F. Cathcart and Dr. Dan C. Elkin.

DR. GUY G. LUNSFORD, with the State Board of Health, spoke on the Ellis Health Law at the City Auditorium, Clarkesville.

DR. A. B. DANIEL, Claxton, spoke at the Community House at Claxton, on *Three Plans for Medical Treatment Along New Trends*. He said the plans he had in mind were: first, medicine as practiced in Russia; second, as practiced in Europe and in a small way in America, known as health insurance; third, known as group hospitalization which is proposed in a bill before the General Assembly of Georgia.

THE SECOND DISTRICT MEDICAL SOCIETY will meet at Tifton on April 9th. Dr. W. A. Newman, Macon, will read a paper on *Surgery*; Dr. O. R. Thompson, Macon, *Obstetrics*; Dr. I. M. Lucas, Albany, *Pediatrics*; Dr. Henry M. McGehee, Moultrie, *Medicine*; Dr. R. F. Wheat, Bainbridge, *Neurology*.

OBITUARY

Dr. Lemartine Griffin Hardman, Commerce; member; University of Georgia School of Medicine, Augusta, 1776; aged 80; died in an Atlanta hospital on February 18, 1937. He was born and reared on a farm near Commerce. Dr. Hardman described his early days at Commerce and his equipment to practice medicine as follows: "I used the front room for a drug store and slept in the back room. I had an old mule I used to drive, and I began my career with the little store and this mule." He served as intern at Bellevue Hospital, New York City; took post-graduate work at the University of Pennsylvania School of Medicine, Philadelphia; New York Polyclinic Medical School and Hospital, New York City; Guys Hospital, London, England. He began the practice of medicine with his brother, Dr. W. B. Hardman. While within a few years after he began the practice of medicine, he gained recognition for his research in the field of

anesthetics and success in the practice of medicine; his activities were not limited to medicine alone. He was President of the Harmony Grove Cotton Mills, Northwestern Banking Company, Commerce Telephone Company and the Hardman Drug Company, all of Commerce; owner and operator of the Hurricane Shoals Light and Power Company and the Nora Mills; and Director of the First National Bank of Commerce; at one time Trustee of the Georgia Agricultural College, Shorter College at Rome, Southern Baptist Theological Seminary at Louisville, Ky., and the Experiment Station at Griffin. Dr. Hardman owned large tracts of farming lands in Georgia and was an enthusiastic believer in diversified farming which was successful. His activities were not confined to the above. His political career was worthy of emulation and bore excellent results. He served in the lower house of the General Assembly of Georgia from 1902-1906; upper house 1908-1910. Dr. Hardman was one of the original advocates for the State to build and maintain the State Tuberculosis Sanatorium at Alto. He was the fifth member of his family to serve as Governor of Georgia, and was the first physician ever elected to the office. He was elected for two successive terms and served from 1927 to 1931. At his second inauguration as Governor, Dr. Hardman spoke in part as follows: "It is apparent in our State, and indeed in most, if not all the states of the Union, that there is a need and a demand for a modern, business-like arrangement of operating the State's affairs, that will simplify our plan of operation, and thereby suggest to us equality and justice in the support of our State government and our State institutions." He also advocated the development of the State Agricultural College, maintenance of an adequate public health program and to uphold the majesty and enforcement of the law. He was a member of the Jackson County Medical Society, Ninth District Medical Society, an active member of the Medical Association of Georgia for 59 years, Southern Medical Association, Association of Surgeons of the Southern Railway Company, American Medical Association, and the Baptist Church. Both houses of the General Assembly of Georgia adopted resolutions deploring the death of the former Governor, the flags at the Capitol were lowered to half-mast and committees from both houses including Statehouse officers were appointed to represent the State at the funeral. Surviving him are his widow, one son, L. G. Hardman, Jr., Commerce; three daughters, Miss Sue Colquitt Hardman, Miss Emma Griffin Hardman, both of Commerce, and Mrs. Linton Collins of Washington, D. C. Rev. H. H. Shell conducted the funeral services from the residence. Interment was in Gray Hill cemetery at Commerce.

Dr. Thomas J. McArthur, Cordele; member; Southern Medical College, Atlanta, 1894; aged 68; died suddenly of heart disease at his home on February 15, 1937. He was a native of Wilkinson County. After he graduated in medicine, he practiced at Unadilla for nine years, removed to Cordele where he practiced until he retired from active work a few years ago. He was successful in his undertakings. He was public spirited and aggressive in his efforts to promote the

welfare of his community. He was one of Cordele's first citizens to advocate the building of the Crisp County Hydroelectric Power Plant and was untiring in his efforts until the plant was built and in operation. Dr. McArthur served for several terms as President of the Cordele Kiwanis Club; President of the Cordele Board of Trade; Emory University Medical Alumni Association; Medical Association of Georgia, 1908-09; served on the State Board of Health and the State Board of Medical Examiners, and was a faithful member of the Primitive Baptist Church. He had many warm personal friends and was one of the State's best and foremost citizens. Surviving him are one daughter, Mrs. Ralph Chandler, Southern Pines, N. C.; three sons, Dr. C. E. McArthur and Marvin McArthur, both of Cordele; and Tom McArthur of Adel. Funeral services were conducted by Elder W. H. Crouse and Elder M. N. Childs of Yatesville, from the Primitive Baptist Church. Interment was in Sunny-side cemetery.

Dr. Robert L. Z. Bridges, Brinson; member; Louisville Medical College, Louisville, Ky., 1894; aged 66; died suddenly at his residence on February 14, 1937. He owned a large tract of farming land and was a successful business man as well as a practitioner. His practice carried him into every section of the community and into adjoining counties. His acquaintances held him in high esteem. He was one of the State's best citizens, and a member of the First Baptist Church. Surviving him are his widow, five daughters, Misses Emily, Evelyn and Jane Bridges, all of Brinson; Mrs. T. J. Ferrell, West Palm Beach, Fla.; Mrs. W. H. Stover, Dinsmore, Fla.; nine sons, H. A., J. E., L. B., Z. H., John, Lanier, Madison and Mercer Bridges, all of Brinson; and R. E. Bridges of Shanghai, China. Funeral services were conducted by Rev. W. T. Bodenhamer from the First Baptist Church. Burial was in the Brinson cemetery. Members of the Decatur-Seminole Counties Medical Society were honorary pallbearers.

Dr. William Richard Moore, Cairo; member; University of Georgia School of Medicine, Augusta, 1898; aged 70; died of influenza at a private hospital in Waynesboro on January 8, 1937. He was a native of Rabun County, Georgia, and received his early literary education at Hiawasse. Dr. Moore practiced many years in Pierce County, then moved to Cairo. Until the time of his last illness he enjoyed an extensive practice. He was held in high esteem. Dr. Moore was a member of the Knights of Pythias, Masons and Baptist Church. Surviving him are two sons, Dr. L. L. Moore, formerly of Cairo, and J. Hugh Moore, Blackshear; two daughters, Mrs. C. C. O'Neal, Blackshear, and Mrs. Vida Lovett, Homerville. Interment was in the city cemetery of Blackshear, his former home.

Dr. Roscoe Felix Johnson, Columbus; Baylor University College of Medicine, Dallas, Texas, 1914; aged 45; died suddenly of heart disease in his office at 1310 Broadway, on January 31, 1937. He was a native of Raleigh, Georgia. Dr. Johnson volunteered for service in the World War, served as First Lieu-

tenant in the British Army on assignments in hospitals in England and Ireland, promoted to Captain and went with the Forty-Eighth British Division to Italy and was decorated by the Italian government for his brilliant service. He held an enviable record as an anesthetist. Dr. Johnson was a member of the American Legion, Masons and Shrine. Surviving him are his widow, two sons, Roscoe F. Johnson, Jr., Lewis Johnson; his father and stepmother, Dr. and Mrs. J. H. Johnson, Columbus; two sisters, Mrs. Betty Gilmore, Memphis, Tenn., and Mrs. Frank G. Staggs, Columbus; two brothers, Drs. C. D. and J. E. Johnson, Columbus. Funeral services were conducted by Rev. Albert S. Trulock from the D. S. Stiffler Mortuary. Interment was in Riverdale cemetery.

Dr. Benjamin Frederick Preston, Farmington; Eclectic Medical College, Cincinnati, Ohio, 1908; aged 60; died at his home after a long illness on February 3, 1937. He was born and reared in Oconee County and was a prominent physician there for over twenty-five years. Dr. Preston took an active interest in the welfare of his community and was a leading citizen. Surviving him are his widow, one son, Benjamin F. Preston, Jr., U. S. M. C., San Francisco; two daughters, Miss Lillie Preston and Miss Sue Preston, both of Farmington. Funeral services were conducted from the Farmington Methodist Church. Interment was in the churchyard.

Dr. Joseph H. Hand, Blakely; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; aged 81; died on February 4, 1937. He was a native of Baker County. Dr. Hand began the practice of medicine at Blakely immediately after graduation. He enjoyed the confidence and esteem of the people and was a successful practitioner. Surviving him are one sister, Mrs. B. H. Askew, Arlington, several nieces and nephews. Burial was at Quincy, Florida.

NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL

New York City

Dr. Russell L. Cecil, Professor of Internal Medicine at the New York Polyclinic Medical School and Hospital, gave a special afternoon lecture on Wednesday, January 13th on *Streptococcal Infections and Their Treatment*.

At the January meeting of the Polyclinic Clinical Society, the following program was presented:

"The Frequent Failure to Recognize the Presence of Disease of the Nasal Accessory Sinuses" by James W. Babcock, M.D., Presbyterian Hospital (by invitation). The discussion was opened by Russell L. Cecil, M.D., Horace S. Baldwin, M.D. (by invitation) and Max Halle, M.D. The second paper of the evening was "Endocrine Obesity in Children" by Murray B. Gordon, M.D. The discussion was opened by Samuel A. Levine, M.D. (by invitation); Irving H. Pardee, M.D. (by invitation) and Sidney V. Haas, M.D.

At the February meeting of the Polyclinic Clinical Society, the following program was presented:

"The Role of Acute Infection in Hypertensive Cardiac Failure" by James R. Lisa, M.D., City Hospital of New York (by invitation). The discussion

was opened by Harold E. B. Pardee, M.D., and John Carroll, M.D. The second paper of the evening was "Recent Advances of Thoracoplasty Collapse in Pulmonary Tuberculosis" by Pol N. Coryllos, M.D. The discussion was opened by George G. Ornstein, M.D. (by invitation) and James S. Edlin, M.D.

The following program was presented at the March meeting of the Polyclinic Clinical Society:

"The Vermiform Appendix: Its Physiology and Pathology" by H. A. Royster, M.D., Raleigh, N. C., and "Carcinoma" of the Breast, with Sound Films in Color" by Herbert C. Chase, M.D.

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★*Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
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Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3, 306-309

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., April, 1937

Number 4

CESAREAN SECTION*

O. R. THOMPSON, M.D.
Macon

In a study of obstetric literature one finds that the incidence of cesarean section in the United States varies from 1 to 10 to 1 in 500. The indications may be found to be anything from a contracted pelvis to the patient's desire for delivery by section rather than through the natural passage. The variation in incidence and indications show that there is either a great difference in opinion as to the indications for the operation, or a marked difference in the anatomic structure of the women in different sections of the country and in different clinics in the same community. The latter assumption is ridiculous and the former cannot be explained on the basis of a difference of opinion, but is due to the fact that the technic of the procedure has been developed so that there is a sense of security experienced by all parties which leads to the performance of entirely too many operations of this type.

The astounding mortality of mothers and babies revealed by an analysis of cesarean sections performed in different localities of this country should convince anyone that this is not an operation to be taken lightly, and that there is something indicated beyond surgical skill and the desire to operate—and that is sound obstetric judgment. Obstetrics is not an adjunct of general surgery and the time will never come when the best way for the birth of a baby is the abdominal route and not through the natural passage. The high mortality rate is largely due to the failure of the attending physician to have a thorough knowledge of his patient, and to know his own limitations. He must be able to recognize and handle the borderline cases

in such a way that, when necessary, operative measures will be safe. A woman who is fatigued from long labor, has had many vaginal examinations, has fever, and upon whom attempts have been made to deliver the baby by other means, is not a good risk for a cesarean operation.

The time of the operation in respect to labor is an important factor in the mortality rate. According to Miller: "When it is an elective procedure and when every circumstance is favorable, it has a minimum mortality of at least 2 per cent. In average hands—and these it must be remembered, are the hands that do most of our surgery—it carries a mortality of from 10 to 12 per cent. The death rate increases approximately 1 per cent with each hour of labor and each vaginal examination, especially after the membranes have ruptured; it increases 10 to 15 per cent with each attempt at delivery; and it reaches 50 per cent after attempted craniotomy. In plain words, this means that the mother's life is being placed in jeopardy for the sake of a child whose chances are frankly rather more dubious than her own. For it must not be forgotten that the child's danger increases in like ratio with the mother's, and that the fetal and infant mortality, in these days of casual section, is quite as serious a consideration as the maternal death rate."

Much of the waste of human lives and health could be saved if pregnant women would submit to frequent periodic examinations by competent physicians. With careful supervision the physician in charge could plan and would not be forced into performing emergency operations. Cesarean operations are always attended with some risk, even though they are performed by the most experienced surgeons. After the operation has been performed and the result is satisfactory to all concerned, there remains a scar in the

*Read before the Third District Medical Society, Cordele, Nov. 13, 1935.

uterus that will remain a menace to future childbearing. This fact should be borne in mind before the decision is made to operate.

"The preservation of maternal life and health and of fetal life" constitutes the only justifiable indication for cesarean section. There is a general agreement as to the absolute indication, which is confined to a situation where there is an obstructing tumor or the pelvis is contracted so that a living or dead fetus cannot be delivered through the natural passage. In the group of relative indications, each operator must rely upon his own skill, judgment and experience, all guided by that intangible something we call "obstetric conscience."

Spontaneous delivery may be expected in 80 per cent of all cases of pelvic contraction. In each patient there should be a careful study of the pelvic measurements, the shape of the pelvic cavity, and the size, position, and presentation of the fetus before the onset of labor. A roentgenologic study, preferably a stereo, is of great importance in determining the exact proportion between the presenting part and the pelvic inlet. During the labor rigid asepsis must be maintained, vaginal examinations should not be made, and, if possible, the membranes should be held intact. The patient's strength should be maintained by forcing food and fluids; alkalis should be given to prevent the development of an acidosis; rest and sleep should be obtained by the use of morphine, scopolamin and one of the barbiturates. The progress of labor and the patient's strength should be observed and not the clock. A standard "test of labor" cannot be made applicable to all patients and I should like to emphasize the danger of allowing the patient to suffer too long and become exhausted before resorting to some operative procedure. The dehydrated, exhausted and infected patients give us the highest mortality rate following cesarean operation.

Cesarean section is rapidly becoming the method of choice in delivering patients of central and partial placenta previa. In those patients, primipara as well as multipara, with thick, rigid, and undilatable cervixes, the method of delivery, in interest of both mother and baby, is the abdominal route. The delay and shock necessary to dilate the

cervix and deliver is certainly a more serious ordeal for the mother and carries a higher death rate for the baby.

In patients who have premature separation of the placenta, in the primipara with an undilated cervix and in the multipara with an undilatable cervix, the procedure of choice is delivery by section. The child may be saved and the operator is able to control the uterine hemorrhage. If the hemorrhage is concealed and has been going on for some time, there may have developed an extravasation of blood in the uterine wall, destroying its contractile power, making a supra-vaginal hysterectomy necessary before the uterine hemorrhage can be controlled.

Eclampsia is not an indication for cesarean section. Toxemia of pregnancy and eclampsia are medical conditions and not surgical. With our present knowledge of the toxemias of pregnancy and the excellent results obtained with the conservative treatment, one is hardly justified in doing a section on an eclamptic patient unless the toxemia has resisted all treatment and the patient is rapidly growing worse. Should a section be necessary for obstetric reasons, the patient should be treated and prepared for the added strain of an operative delivery.

Patients with a moderately contracted pelvis and giving a history of one or more labors ending disastrously for the baby, should receive a most careful study. If there is any doubt as to what to do, labor should be induced at eight and one-half months or the patient allowed to go to term and sectioned immediately after the onset of labor.

Cesarean section is the preferred method of delivery in cases of stenosis of the cervix due to congenital abnormalities or the end results of previous operations, injury, or disease. I was compelled to perform a section on a patient with marked fibrosis of the cervix following the use of radium for the treatment of uterine bleeding. Sections are indicated in cases of carcinoma of the cervix or neoplasms involving the adnexa. Ovarian cysts large enough to cause complications during labor should be removed during the early months of pregnancy. Fibroid tumors may obstruct the birth canal but usually come out of the pelvis during the last months of pregnancy and do not as a rule complicate the

delivery. Patients with ventral fixation of the uterus should be sectioned, and the operation should be seriously considered on those patients who have had extensive myomectomy or a successfully repaired third degree laceration. Patients showing disproportion and cervical dystocia in whom there is an arrest of the head at the pelvic inlet and the cervix undilated after a satisfactory test of labor, should be delivered by section. Manually dilating the cervix and the use of forceps on a floating head or delivery by version usually means disaster to the baby and much damage to the mother. Medical complications, such as cardiac disease or tuberculosis, when associated with a contracted pelvis or other conditions which insure a difficult labor, may justify cesarean section. The decision must depend upon the judgment of the operator.

Authorities do not agree as to the necessity of repeating the cesarean operation in subsequent pregnancies. "Once a cesarean, always a cesarean," is a dictum that has been accepted by many of the profession. I do not subscribe to the dictum, because many women give birth safely to children in the natural way after a cesarean operation has been previously performed. The method of delivery in subsequent pregnancies should be determined by the indications for the previous section, type of operation performed and the postoperative convalescence.

A patient should not be subjected to the dangers of a cesarean section to deliver a dead fetus unless her pelvis is so contracted or deformed that an embryotomy cannot be performed without great damage to her tissues. Embryotomy is a loathsome operation, but its use in delivering some of the badly managed and neglected cases would certainly lower the high maternal mortality and probably not increase the infant mortality. The wider use of this operation would mean more living mothers, and, ultimately, other, better managed pregnancies for them. An added justification lies in the fact that in practically every average series of cesarean section the mortality is dual in 25 per cent of all fatalities.

There is an apparent tendency to exalt the child's life at the expense of the mother's. The ideal of obstetrics is to save two lives,

but occasionally a decision has to be made, and in deciding the course I share the opinion of Miller: "If the woman is a primipara, her present child must be sacrificed to her future generative possibilities. If she is a multipara, with living children, her present child must be sacrificed to her existing responsibilities. And under no circumstances, be she primipara or multipara, should her life be jeopardized for the sake of a child whose chances, no matter for what reason, are in anyway dubious."

The best results following cesarean section will be obtained if the operation is performed on the estimated date of labor or a few hours after its onset, before the muscular efforts of labor have been sufficient to lower the vitality of the patient and before repeated vaginal examinations have given rise to uterine infection. Just before or immediately after the onset of labor, the mother is in the best possible condition for the operation. The increasing irritability of the uterus at the end of pregnancy will insure the proper contraction and retraction necessary for the control of the hemorrhage during and after the operation. The size of the child should be carefully estimated by x-ray examination, and if it is unduly small, the date of operation should be deferred, to avoid the possibility of delivering a premature infant. When labor has begun, or if in the doubtful cases a longer or shorter test of labor is advisable, the operation should be performed as soon as the indication is recognized as positive. Rectal examinations should be used instead of vaginals, and the membranes, if possible, should be kept intact. Every hour of active labor renders the prognosis more serious and, therefore, no delay should be permitted after the need of the operation is recognized. The cesarean operation is never advisable after serious attempts at delivery from below have been made.

The obstetric surgeon should be familiar with the various operative procedures and choose the technic that will be safest for the individual patient. The classic section should be reserved for operations of election and clean cases when a rapid delivery is indicated. These include premature separation of the placenta, central and partial placenta previa, and repeat sections where classic sec-

tion has been performed previously. I wish to recommend the low cervical operation as developed by Beck and DeLee as having many advantages over the other procedures, and its technic offer no difficulties to one trained in pelvic surgery. It has a lower mortality and morbidity rate and may be performed with safety after a relatively long test of labor. The advantages of low cervical section are: The incision is made in the thin, non-contractile part of the uterus, and when closed, is completely covered over by the bladder and peritoneum. Rupture of the scar during subsequent pregnancies is less likely to occur because the incision is in the lower segment, which is the resting, non-involuting part of the uterus during the puerperium, and which plays a late and passive part in the stretching incident to pregnancy and labor. The Porro operation should be limited to patients who have conditions that demand hysterectomy after delivery of the child. These include: multiple fibromyomas which cannot be removed by myomectomy; malignant disease of the uterus; premature separation of the placenta with marked destruction of the uterine musculature; the presence of incurable and extreme cicatrization of uterus and vagina, and uterine infection from contamination during labor. The range of usefulness of the vaginal section has become limited since the perfection of the abdominal cervical operation. The low cervical section is technically less difficult and offers almost as much protection against infection as the vaginal section. The vaginal section is recommended when one of the following conditions demand the rapid emptying of the uterus before the eighth month of pregnancy: (1) lesions of the heart, lungs, and kidneys; (2) toxemia of pregnancy in the presence of impending convulsions and in a patient who did not improve under the conservative treatment; (3) pernicious vomiting of pregnancy in a patient who is dehydrated and would not stand long labor; (4) premature separation of the normally implanted placenta in its milder forms.

Conclusion

Every case should be conducted as if cesarean section were contemplated; which means strict asepsis; strength of the patient maintained, and an early recognition of the

necessity to operate in the interest of the mother's life and health and the life of the baby.

Since every justifiable obstetric operation represents a failure on the part of nature, it behooves us to take due care that the results obtained following any obstetric operation do not reflect on our judgment and skill as physicians.

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MEDDLESOME OBSTETRICS*

JOSEPH AKERMAN, M.D.

Augusta

As medical practitioners we are glad to welcome the modern improvements in surgical technic and diagnostic acumen and are very much interested in every effort to improve our obstetrical procedures, but, I fear we are at times tempted to rather blindly resort to operative procedures with lack of appreciation of the resourcefulness of nature. Or, in the language of the late Doctor Williams, we have developed the "furor operativa" to an exaggerated extent.

For years it has been our custom to impress upon each class of medical students the two-fold importance of a careful study of spontaneous labor; first, to learn when nature is doing or failing to do her part, and second, how best to imitate nature when she is failing to carry on properly. We are all convinced that all pregnant women should be subjected to adequate prenatal observation and care.

It is the purpose of this paper to briefly call attention to some of the indications and contraindications for resorting to manual or instrumental interference. However, before discussing these indications it might be well

*Read before the Tenth District Medical Society, Elberton, August 14, 1935.

to call your attention to some pertinent considerations which must enter into our plans and decisions. Our facilities for hospitalizing obstetrical patients are limited and often absent. Moreover, in many instances domestic and economic conditions are such that the patient would not utilize such facilities even if available. Furthermore, opportunity for specialization in the field of obstetric surgery is not open to many practitioners. So we must face the fact that a large number, perhaps the majority, of our women must expect delivery in their homes by the general practitioner. Procedures that may be considered safe and sane in a well equipped maternity hospital with a well trained personnel would be far from it in the home.

First stage of labor: Feverish haste in this period is often productive of detriment to both mother and child. The child's head is not subjected to undue pressure as a rule, so if heart sounds are good the interests of the child are best safeguarded by delay rather than haste. The mother's strength and energy should be conserved rather than expended, so she should be encouraged and warned against frantic efforts at expulsion. Such drugs as pituitary extracts should be withheld and sedatives such as barbitals, chloral and even morphine given. Nourishment, especially fluids, should be given. To make this plain to the ordinary patient I tell them that, "You cannot get a mule out of the stable till the door is open" and that nature often takes some time to accomplish this.

Forceps: The obstetric forceps can be one of the greatest blessings and also one of the worst curses to the parturient woman. Forceps should be used when very definite indications are present, but these should be inherent in the interests of the mother or child or both and not in the convenience of the physician or to demonstrate his ability to use forceps. To again quote Doctor Williams, "Reed birds for supper does not call for forceps delivery."

Podalic Version: This operation is one of the most valuable we can employ in properly selected cases, but is also often abused. As is well known some men of exceptional dexterity are employing it almost as routine with marvelous success, but as was brought

out by McDowell of England and Williams of Baltimore, at one of the meetings in Chicago, it is dangerous as a routine in ordinary hands.

Cesarean Section: This is often the only hope of securing a living child and should be the method of choice for delivery in many cases. In most instances the indications should be recognized in advanced and proper environment arranged before the onset of labor. The classic operation with conservation of the uterus should be performed only when membranes are intact or at least only a short time after rupture. Harris has found from careful bacteriologic study that the flora of the uterine cavity is directly proportional to the length of time elapsing between the rupture of the membranes and the taking of the culture. The low cervical operation has somewhat lessened the danger of infection. In neglected cases destructive operation is often preferable. It is doubtful if eclampsia per se is ever an indication for this operation. Of course justifiable indications may coexist with eclampsia. The same is probably true of prolonged labor without definite pelvic obstruction. In almost all cases proper treatment of the patient and her eclampsia will enable her to deliver herself with perhaps low forceps at the end. It is often desirable to induce labor by the use of catheter, puncture of the sac, etc.

Comment

It might be well to add a few words about the care of the ordinary patient during pregnancy and delivery. Adequate prenatal study often avoids the necessity and even the strong temptation to meddle with the work of nature. This should begin as early as possible and take into consideration the condition of vital organs such as the heart, lungs and kidneys as well as evidences of impending toxemias. In addition to this we should use all means at our disposal to determine size and shape of the pelvis as well as size and position of child. All these should be interpreted in the light of past history in multipara. If this is done we are able to avoid unnecessary repeated vaginal, and other manipulations. We are also better able to advise her as to the desirability of putting herself in another environment for her safe delivery.

The more we study ability of dame nature as an obstetrician the more we will be impressed with her ability to cope with many of the problems of human as well as veterinary obstetrics. We should always endeavor to treat her as a willing ally rather than attempt to usurp all her functions in the very important duty of child-bearing.

HYPERVENTILATION

Report of Cases

GEORGE F. KLUGH, JR., M.D.
Atlanta

When used as a part of the physical examination hyperventilation is of great value in estimating degree and type of instability of the autonomic nervous system. In the so-called sympathicotonic individual, duplication of outstanding symptoms can nearly always be accomplished by this procedure. Valuable information is gained by studying the physiology of the interrelationships involved.

The Test

Full confidence of the patient must be obtained. With the subject in a relaxed recumbent position, the reflexes are tested and a conclusion reached as to the degree of their activity. The clinician demonstrates deep, rapid, sighing expiration. The subject is then allowed to try it. Later, having noted the time, the rapid forced expiration is begun. The clinician must use diligence in not allowing the respiratory rate of the subject to lag. Normally, one should hyperventilate in this manner at least three to five minutes without noticeable symptoms. Development of dizziness, marked palpitation, stiffness of the hands and muscles of arms and legs, increased reflexes, tremors, hot forehead and cold extremities at two minutes or less is, in my opinion, conclusive evidence that the subject is sympathicotonic.

Type of Patient

Patients in whom complete study has failed to reveal the presence of organic disease, but present vague or definite signs of an unstable sympathetic nervous system, even in the presence of other functional conditions, such as endocrine diseases, are the most suit-

able for study with hyperventilation. Many of these individuals are suffering severely from the stresses and strains of life, but are worth while citizens of above-the-average intelligence, and are only too well aware of their obligations and ambitions. These patients are often labeled neurotic, and they go from physician to physician. Each doctor is forced at some time to mention the nervous system, though there is great variation in the approach and the things he tells them. This variation tends to aggravate anxiety states where they exist.

Most physicians agree that the typical asthenic is born with an unstable autonomic nervous system. Stokes¹ calls it the "neurogenous substrate handed down by parents, giving history of hyperthyroidism, vasomotor reactivity, urticaria, eczema-asthma, hay fever complexes, other allergic trends and neuroticism." Evidence of other function of the sympathetic or adrenergic part of the autonomic nervous system as Dale² prefers to call it, occurs most frequently in this type of patient.

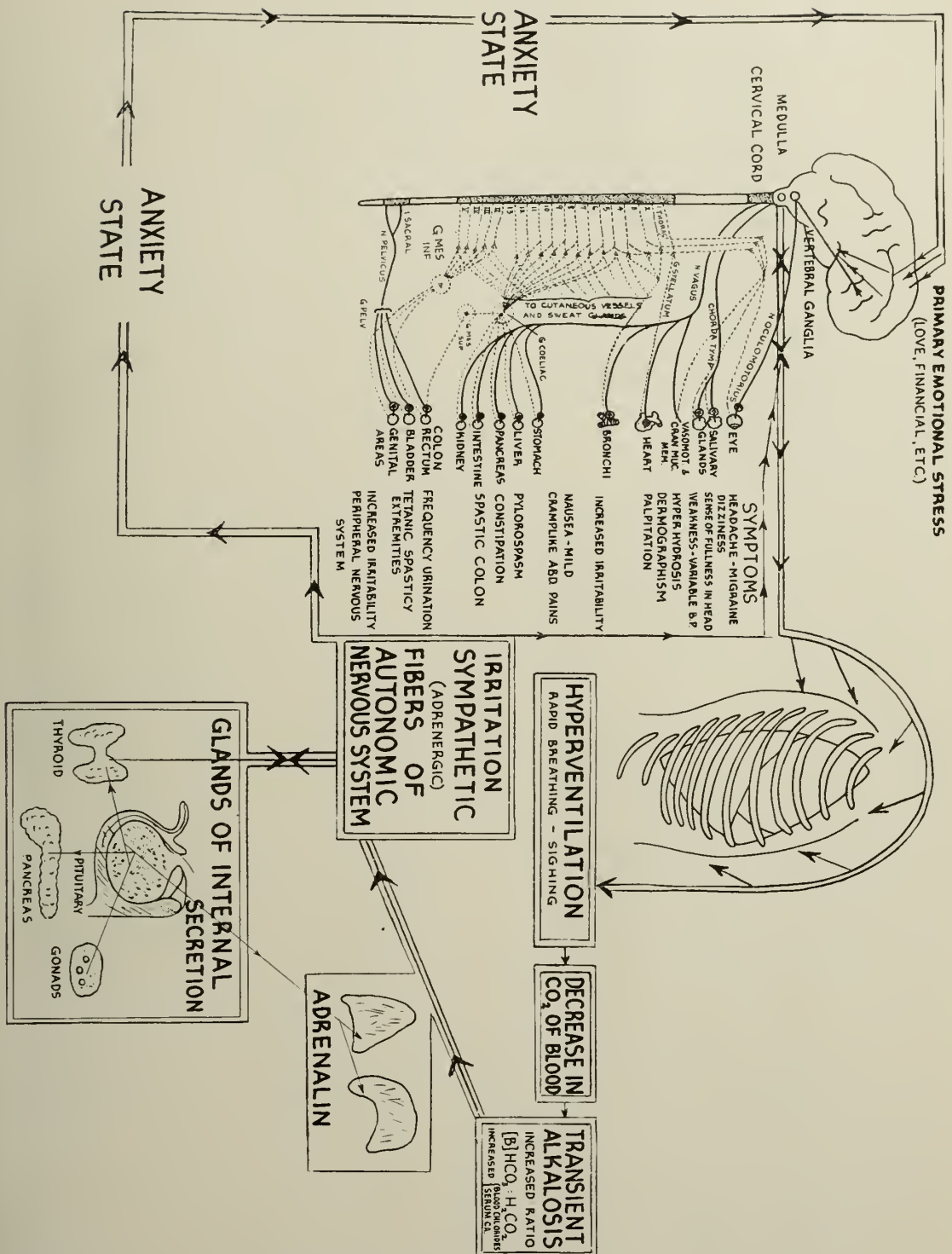
Interrelated to endocrine dysfunction, maldevelopment, psychic factors, and largely dependent on heredity, we must convince these patients that we have diagnosed their cases and have scientific grounds for immediate therapy.

Report of Cases

Case 1. (Hyperventilation Tetany). R. S., a small female, aged 21, student nurse, admitted to hospital after being found by roommate in a semi-comatose state associated with frequent tetanic convulsions. For several days she had suffered severe nervousness and had dropped trays and broken glassware while on duty. Also she experienced constant nausea associated with sharp cramp-like radiating pains in abdomen. For two days prior to admission to the hospital, her urine was scant and there had been increased urgency and burning on urination. Health during previous two or three years had been good.

Had convulsions as a baby; measles and pertussis when very young; influenza at 6; light case of scarlatina at 12; suppurative appendix removed at 11; tonsillectomy at 13; mother died of puerperal sepsis when patient was 17 months of age, and she was deserted by father to the care of aged maternal aunt. Menses began at 14, 28 day cycle with an occasional missed period, always scanty, lasting only two days.

Physical Findings: Temperature 99, pulse 120, respirations 40, and deep in character. Face flushed and hot, lips dry. Marked carpopedal spasm of hands and feet. No enlargement of the heart, rate rapid, sounds of good quality. Increased muscular tension



and hyperesthesia of skin over entire abdomen. Skin of extremities blanched and cold. All reflexes markedly increased. Positive bilateral Babinski; ankle clonus positive. Pelvic: male trichosis of pubic hair, hymen intact. Specimen of blood was taken from vein for blood chemistry during attack. Patient finally emerged into a deep sleep and slept all night. On examination next morning all positive findings were absent. We were successful in reproducing tetanic convulsions by

hyperventilating her for 70 seconds.

Laboratory Findings: All blood counts normal; urinalyses over a period of days showed low specific gravity with acid reactions. Wassermann and Kahn negative. Blood chemistry: sugar 96 mg., N.P.N. 24 mg., carbon dioxide combining power 65 vol. %; calcium 13.9 mg. Phosphorus 3.7 mg., albumen 5.66 mg., globulin 1.06 mg., ratio 5.3. Blood chemistry, second day: carbon dioxide combining power 57 vol.

%; calcium 11.8 mg., phosphorus 4.5 mg., albumen 5.72 mg., globulin 1.18 mg., ratio 4.5 Erb's test: very marked hyperexcitability of motor nerves to galvanic stimulation. Gastric analysis: no free hcl. Total acid 30.

Later study of this patient showed markedly decreased anterior-pituitary-like hormone in specimens of both blood and urine. Patient is a homosexual. The attack of hyperventilation tetany was precipitated by sexual partners betraying confidence.

Extremely gratifying results were gained by controlling ventilation, administration of hydrochloric acid, change in environment and administration of anterior-pituitary hormones.

Case 2. (Hypogonad and Anxiety Neurosis)—A Common Type. S. P. N., a white female, aged 30, housewife, complaining of extreme nervousness, pains over precordium, attacks of dyspnea and palpitation usually occurring at night. These symptoms have been present with increasing severity for five months following an induced abortion, and massive uterine hemorrhage. She had had two abortions performed at yearly intervals prior to this. Two children, ages 5 and 3, are living and well. She is unable to attend to household duties and children for thinking about her condition; states that "she is afraid she will drop dead during one of the attacks." Since the second abortion, menses have been scanty and very irregular—at times missing as many as three periods. Was never sick or nervous before present illness.

Physical examination showed a small well developed female with a tired drawn facial expression, who gesticulates, talks rapidly, and works herself into a high pitch of excitement during conversation. Skin of face flushes easily and alternates with blanching; pupils widely dilated. Tonsils chronically infected. Breasts pendulous—very little glandular tissue palpated. Marked irregularity in heart rate—no other positive cardiac findings. Tremor of hands and vasomotor instability of skin of extremities. Marked hyperhidrosis of hands and axilla, all reflexes hyperactive. Pelvic examination negative. Marked dizziness, precordial tightness and palpitation in 45 seconds of hyperventilation.

Laboratory: B.M.R. minus 1%; blood count, urinalysis and blood chemistry normal.

After seeing her at home in attacks it was easy to determine that hyperventilation and fear were the outstanding features. Convincing her as to the mechanism of the attacks, for which holding the breath, hydrochloric acid, ergotamine tartrate and phenobarbital were given, brought about immediate cessation of attacks. Amenorrhea developed to an increased degree in following months. Menses, however, were regulated by hormone therapy. Female sex hormone later seemed to sedate her as well as anything. No more "heart attacks" have occurred and patient is now happy and pregnant again.

Comment

Practically every sympatheticotonic sighs constantly, and accompanying are phenomena of increased rate and depth of respiration. Ransom³, experimenting with cats,

found basis for the thought of other authors that these impulses arise from an over active hypothalamus. Loss of carbon dioxide is increased and an uncompensated alkalosis, transient or constant, is produced. Several patients in whom I have checked and rechecked carbon dioxide combining powers have revealed constant readings of around 60 volume per cent, and in one, the case of hyperventilation tetany, above 60 volume per cent. These findings and other chemical factors have long since been investigated and proven by Collip⁴, Scott and Cantor⁵ and others.

Tiffeneau and Broun⁶ have shown through extensive experiments with live tissues in the laboratory that "the O H ions markedly reinforced the vaso-constrictor action of adrenalin and diminished its inhibiting effects upon the intestinal musculature." They estimate about 100 per cent increase in potency of adrenalin in an alkaline medium on adrenergic tissues. This carefully conducted work explains why the sympatheticotonic individual reacts so markedly when hyperventilation creates an increase in O H ions. We believe increased excitation of adrenergic nerves occurs in the presence of increase in O H ions and physiologic or increased secretion of adrenalin. Bock⁷ has recently shown that estrogenic hormone and the gonadotropic hormones of the anterior-pituitary gland produce positive tests in mice in smaller doses when given while the animal is on an acid diet. Conversely, nearly twice the amount of hormone is required in each instance when the animal is on an alkaline diet. From this and other work it would appear that the activity of hormones in general is affected in the living organism by the acid:base balance.

Clinically, I have often found marked evidence of disturbed acid:base balance in women, accompanying the hypogonadal state of the climacteric. This has resulted most commonly from the pernicious habit of taking large doses of popularly advertised alkalis. Tons of alkali are being taken by the public each month. Blood chemistry has shown uncompensated alkalosis in many of these "alkali takers."

Therapy

The therapeutic approach is divided into two different parts.

The first procedure is directed toward alleviation of immediate symptoms by balancing acid:base equilibrium. Dilute hydrochloric acid is given with meals with rigid instructions to take no alkali and to hold the breath at every opportunity. A major objective is to keep the patient conscious of depth and rate of respiration and to eliminate sighing. It is of primary importance to see that the patient understands the mechanism of the production of symptoms as demonstrated by hyperventilation, and believes in it. A general sedative, such as phenobarbital, is given in small doses, together with a dilator for the sphincters of the gastrointestinal tract. I find atropin and tincture of belladonna very satisfactory.

Enteric dilators are necessary, since as stated, the enteric sympathetics are inhibited in an alkaline medium. Excellent depression of the enteric overactivity, as manifested by spasticity, has been gained from monobromsalicyl-alcohol (bromsalizol). In addition, I have been cautiously using ergotamine tartrate in doses of 1/80 grain three times daily. The drug is given only one week out of every three. With the exception of certain hormones, ergot is the only specific sedative I have found for the sympathetic nervous system.

The second procedure has for its aim permanent relief. A complete study of the glands of internal secretion, including chemical relationships, is carried out in its entirety. A large majority of sympathicotonic patients have revealed definite endocrine dysfunction as well as psychiatric problems.

Increase in hyperventilation time has been noted in all of those relieved of symptoms under the above therapeutic regime.

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RECENT PROGRESS IN SURGERY*

S. E. SANCHEZ, M.D.

Barwick

The surgery of recent years has been looking in a new direction for guidance; from the study of structure it has turned to the study of function. It has been recognized that it is the functional result that is important to the patient, and that this is as true when we are dealing with a stomach or gallbladder as when we are dealing with a fractured bone. Many failures of the past have been due to absence of physiologic knowledge and of physiologic thinking on the part of the surgeon. The x-ray and the various tests, such as tests of hepatic and renal function, metabolic determinations, etc., have been rapidly adding to our understanding of physiologic processes in health and disease, and the physiologic or functional habit of thinking is today being ingrained in the young surgeons at work in the leading clinics and hospitals both in this country and abroad.

Increased understanding of the physiology of the ovary and of the functional interaction between ovary and uterus has resulted in fewer hysterectomies for uterine bleeding; the diagnosis of fibrosis uteri—a favorite of not so long ago—has fallen into disrepute. The correction of notions obtained on the dissection table as to the size, form and position of various organs, but especially of the stomach, by x-ray studies on the living subject, has widened our conception of the normal. In general, we have become more cautious in intervening surgically for indefinite symptoms without an assured pathologic lesion.

The biologic reactions to the various factors of operation are being given more attention. Duval¹ points out certain small biologic errors in our general operative technique, that increase the intoxication inseparable from any operation, which, however, ought to be kept at the absolute minimum. The U suture, for instance, devitalizes a mass of tissues, a long column of muscle, the broad pedicle leads to absorption of a mass of

*Read before the second District Medical Society, April 13, 1934. Thomasville.

Submitted for publication May 29, 1934.

necrotic tissue and a hematoma is an important source of devitalized blood.

Hower² compared the biologic processes following suture of the stomachs of animals with silk and with catgut, and found that when silk was used fibroplasia came earlier, the wounds accumulated strength more rapidly and the exudative phase was shorter. Whether the material was silk or catgut, he found no advantage in using sutures of large dimensions. Silk penetrating into the lumen of the intestine may give rise to ulcerations; into the lumen of the bladder, to calculus.

Martzloff and Suckow³ have compared rapidity and smoothness of healing under different suture methods in gastroduodenostomies in dogs. They saw the best results when a single layer of serosubmucosal presection sutures were used (Halsted's method). The most profound inflammatory changes occurred with ordinary continuous suture. Separate suture of the mucosa did not hasten healing. Their observations indicate that mucosal inclusions develop in the intestinal wall when the mucosa is pierced by silk sutures. Silk sutures placed without entering the lumen caused practically no inflammatory reaction.

The advantages of balanced anesthesia (safe doses of several anesthetic agents and hypnotics in place of a large dose of a single agent) are pointed out by Lundy⁴, of the Mayo Clinic. Some of the new anesthetics that have proved unsafe in large doses can be used safely and to advantage by this method.

Waters⁵ warns against the misuse of carbon dioxide. One should consider the physiologic disturbances present in the patient. The respiratory center may be overstimulated or depressed; the acid:base balance may be deviated toward the acid or the alkaline side. Carbon dioxide is an exceedingly useful drug, but it should be used always with its definite physiologic effect in mind.

Considering for a moment suggested improvements of detail in surgery of the abdomen, one may mention the recommendation of Counsellor⁶ of the Mayo Clinic to use a 6 per cent solution of acacia, administered continuously during operation, as a preventive of shock and as a substitute for blood transfusion in shock in emergency conditions

within the abdomen; Counsellor points out that in shock consequent on hemorrhage it is dangerous to inject saline or sugar solution to restore blood volume.

The fear of exciting pain in the wound causes patients to avoid deep breathing after operation on the abdomen and this conduces to such complications as pneumonia and phlebitis. To meet this situation Capelle and Fulde⁷ of Berlin evolved the plan of anesthetizing the region of the incision during the first five postoperative days. They introduce the anesthetic (pantocain) through specially constructed tubular needles inserted parallel to one another in the subserous, muscular and subcutaneous layers at the time the wound is sutured.

At the Boston City Hospital, Kimpton⁸ reports that a concentrate of amniotic fluid (Amfetin) has proved useful in reducing the incidence of postoperative infection and of adhesions after operations in serous cavities. It has been used in about four hundred operations on the abdomen and on joints. The amniotic fluid is said to stimulate the normal defense-repair mechanism.

The importance of attacking dehydration in high obstruction of the small intestine has received considerable attention of late. It must be remembered, however, as Mensing⁹ reminds us, that saline and glucose solutions increase intraintestinal pressure, which may result in serious damage to the intestinal wall unless decompression follows. Toxemia does not begin to play a role in these cases until intestinal pressure has impaired the local circulation, but when the obstruction is low, it is interference with the blood supply that is the dangerous factor, the dehydration is less important and time should not be spent on the effort to obtain water-balance before proceeding to operation. It is not water alone that is lost in cases of intestinal obstruction. The chloride level and perhaps that of some other minerals may be reduced below the danger point. Glucose without saline, according to Elman¹⁰, does more harm than good, impoverishing the blood of salts through renal elimination and in the end leaving it poorer than before in both electrolytes and water. Hartmann's combined solution is recommended by Graham¹¹ as superior to saline and glucose. Many early

simple obstructions have, in Wangenstein's¹² experience, been satisfactorily decompressed by nasal catheter suction siphonage. The rationale of this procedure lies in the fact that the chief source of gas in the intestine is swallowed air. Adhesive obstruction responds especially well to this treatment.

Some discussion has arisen as to the advisability of using the pursestring suture in appendectomies. Baldwin¹³ thinks that the pursestring suture increases the incidence of fecal fistula. But Behrend¹⁴ points out that this suture accomplishes the important object of peritonealizing exposed surfaces. He uses it in 98 per cent of his appendectomies, but recognizes that there are cases in which it should not be used, as where the appendix lies in a pocket of pus, or where the base is gangrenous or the cecum is hard and indurated. Fecal fistulas, in his opinion, arise from neglect rather than from the suture.

The recourse to surgery to reduce the abnormally increased output of a particular endocrine has in recent years been applied to the islet tissue of the pancreas. The employment of insulin therapeutically first called attention to the syndrome of hypoglycemia. Recently islet tumors have been found associated with low blood sugar. These may be primary or metastatic carcinomas or adenomas. Graham and Womack¹⁵ and Judd, Allan and Rynearson¹⁶ have recorded a number of cases in which removal of such a tumor has been followed by relief or cure of hypoglycemia. Holman and Railsback¹⁷ performed partial pancreatectomy on a pancreas that was apparently normal on both macroscopic and microscopic study and thereby greatly improved a case of chronic spontaneous hypoglycemia. They feel that still better results would have followed removal of a larger part of the organ.

The association of endocrinology with surgery is seen, again, in recent advances in the treatment of some orthopedic conditions. Parathyroidectomy is done for relief of various bone diseases associated with decalcification. Ballin¹⁸ has presented a study of one hundred such operations. Intractable back-leg aches, curving of the spine, shortening of the stature, multiple fractures not explained by metastatic tumors, cysts and giant cell tumors of bone, all, he says, raise the ques-

tion of hyperparathyroidism. Ballin distinguishes five forms of hyperparathyroidism: (1) the vertebral type, expressed by kyphosis and compressed vertebrae and almost invariably first diagnosed as lumbago, sciatica or sacro-iliac or intervertebral arthritis; (2) the infantile type, which begins with intestinal and urinary symptoms, followed by skeletal pains, and since it develops rapidly, must be operated on early, to avoid frightful deformities, which have in a number of cases been mistreated by exarticulation in the hip joint, presumably for osteosarcoma; (3) the arthritic type; (4) the Paget type; and (5) types in which muscular hypotonia and gastro-intestinal symptoms predominate. Arthritis is mentioned by Funston¹⁹ as occurring commonly in parathyroid disease; it is not, however, always the cause, as both may have a common etiology. Camp²⁰ maintains that the x-ray appearance of the bone in hyperparathyroidism—miliary mottling and granular appearance—is distinct. Blood chemistry studies are, of course, necessary to the diagnosis.

Mackenzie²¹ proposes deliberate opening of the bones in rheumatic arthritis. The opening is made into the bone marrow and some cancellous tissue is scooped out, the aim being decompression. Openings are made in the tibia and femur of both sides. The keynote is imitation of fracture of a large bone. Smaller openings are made in other bones, according to the part affected. He has treated nineteen patients by this procedure in the last two years, with results which appear to have been eminently satisfactory.

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THE JOURNAL

OF THE
MEDICAL ASSOCIATION OF GEORGIA
Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

APRIL, 1937

INVITATIONS

*To the Members of The
Medical Association of Georgia:*

In behalf of the Bibb County Medical Society, we have the pleasure of extending to you a most cordial invitation to Macon for the 1937 Annual Session of the Medical Association of Georgia to be held May 11, 12, 13 and 14.

The Committees are working and planning a program for your benefit and pleasure.

We hope that a large number will be in attendance and we extend to the members a cordial invitation to come to Macon, in the heart of Georgia, and be our guests.

W. L. BAZEMORE, *President*

H. C. ATKINSON, *Vice-President*

W. CHAS. BOSWELL, *Secretary-Treasurer*

It would seem that every member of the Medical Association of Georgia owes it to the organization and to himself to lay aside the cares and humdrum of every-day life once a year and attend the annual session of the Association. It is only by association with his fellows that a man gains that breadth of perspective which is so necessary to a well-rounded doctor, and no greater opportunity is offered for an intensive three-days' post-graduate study than the scientific program of the State medical meetings. These programs are chosen with care and a special attempt has been made this year to adapt it to the needs and interest of the general practitioner.

The City of Macon and the Bibb County Medical Society are very proud of the opportunity of being allowed to sponsor the session this year. They are making every effort to make every moment of your stay here pleasant and profitable and we urge that you come and give us the opportunity to make good these promises.

CHAS. H. RICHARDSON, M.D.

Past-President,

Medical Association of Georgia

LEGISLATION

Legislation always reflects the thoughts of the masses. Bills introduced at the session of the General Assembly just ended were no exception to this rule. While most of the proposed legislation was intended to improve some phase of human endeavor, there were some bills introduced which were not to the best interest of the citizens of this State.

The Committee on Public Policy and Legislation of THE MEDICAL ASSOCIATION OF GEORGIA worked consistently and made every effort to follow their instructions in regard to all matters dealing with public policy and legislation. Under the leadership of Dr. C. C. Aven, Chairman, assisted by Drs. T. F. Abercrombie, C. L. Ayers, J. L. Campbell, J. O. Elrod, Edgar H. Greene, Dan Y. Sage, S. T. R. Revell and Edgar D. Shanks, and supported by numerous members throughout the State, many conferences were held with individuals and groups with the view of furthering the legislative program, the adoption of which would mean, above all things, better health conditions for the benefit of all the people. Space will not permit publication of all that was learned, nor is it wise to do so; but suffice it to say that much progress was made and many friends were won. The Committee will report to the House of Delegates at the Macon session and will make definite recommendations for a future program.

The following are brief summaries of bills with comment in regard to the action by the Legislature:

Basic Science Bill—This bill was introduced in both houses of the General Assembly simultaneously. The Senate committee held a hearing promptly, but the bill was amended and practically killed by those inimical to its passage. At the request of the Committee, and with the help of friends, the bill was withdrawn temporarily from further consideration. The House committee reported the bill out favorably, 17 to 4; but when it was called from the calendar a motion to table carried.

Lien Law for Priority of Claims—This bill proposed to make the claims of physicians, nurses, dentists and hospitals a first lien, attorneys excepted, on claims of injured persons against others on account of carelessness and other things which cause injury. The bill was introduced in both houses and died in committees without action being taken.

Workmen's Compensation Bill—This was part of the new Department of Labor bill and was enacted into



BENJAMIN H. MINCHEW, M.D., Waycross
President, 1936-37

law. As passed, the bill carried seventy days' treatment and \$500, compared with the old act which provided for thirty days' treatment and \$100.

Constitutional Amendment—To permit counties to appropriate funds for medical care and hospitalization of their indigent sick. This amendment passed the Senate and was reported out favorably from the House committee, but died without being called from the calendar.

Barbituric Acid Bill—Sponsored by the Pharmaceutical Association and receiving the support of the Medical Association of Georgia, this bill was withdrawn by its authors after it had been reported out favorably by committees and was on its passage. Time did not permit the re-introduction of this important measure.

State Department of Public Health—Whenever possible, co-operation was given to the State Board of Health. The appropriation for the Department, as finally enacted, carried \$600,000 for each of the two following years.

Federal Social Security—Co-operation was extended to the administration to secure the benefits under this program.

Bill for Indigent Cancer Patients—This measure passed and carried an appropriation of \$50,000. The State Department of Public Health will administer the act and will conduct an educational campaign for

cancer control, and provide a plan for the care and treatment of indigent citizens suffering from cancer.

Group Hospitalization—This bill was sponsored by the Georgia Hospital Association and was supported by the Medical Association of Georgia. The bill was enacted into law and is operative only after consent of the State Department of Public Health. Medical Association of Georgia and County Medical Society approve the plan. Copies of the bill can be secured from Dr. L. C. Fischer, Crawford Long Hospital, Atlanta, whose efforts were largely responsible for the passage of the bill.

Privileged Communications Bill—Introduced by Dr. V. C. Daves, representative from Dooly County, the bill was voted down in the House. Later, an effort was made to amend a similar bill which would protect newspaper reporters on so-called privileged and confidential information, but this measure met defeat.

The Sterilization Bill and Drivers' License Bill were enacted into law.

Defeated bills, all inimical to the people and medical profession, were: The Naturopath Bill; a bill authorizing the corporate practice of medicine and a bill that made it mandatory for any state, county or city hospital to admit for treatment any citizen of the State and charge a fee for hospitalization.

LONGEVITY VERSUS STAMINA

FRANK K. BOLAND, M.D.
Atlanta

Readers of newspaper sporting pages are impressed by the reports of the increasing number of college football players who are injured. Every week during the season a half dozen or more members of most of the teams seem to be so badly disabled that they cannot play. Why is this? The equipment of each player, with its headgear, shoulder pads, kidney pads, and often knee braces, appears to provide ample protection against serious trauma. The football squads are so large that only a minimum number of members are required to play the full sixty minutes of a game, the average player being in action less than half the time. From the days of the dangerous flying wedge the rules have been made more and more rigid, mainly with the purpose of preventing bodily harm. Four keen-eyed, experienced officials watch every play for violations of the rules which are liable to cause injuries, while the penalties inflicted for such infractions are the most drastic in the rule-book.

Many years ago, when I was in college, our entire football squad consisted of about fifteen men, and usually the first eleven played the entire sixty minutes. It was an event whenever a "sub" entered the line-up. In the four years I recall but one boy being badly hurt (with a broken shoulder), although it was during this period that Von Gammon was killed. I witnessed this tragedy which occurred in a scrimmage in which it seemed that the entire twenty-two members of the Virginia and Georgia elevens were piled on top of one another, with Gammon on the bottom. Altogether the

incapacity from injuries was less than ten per cent what it appears to be today, in spite of the fact that the players' equipment against trauma was less than half as extensive as it is today, and the rules permitted play twice as rough. There were no trainers, and but very little training.

While caring for some injured football players, and wondering why they couldn't "take it" like their fathers and grandfathers used to do, I received from my former classmate, Roland M. Harper, Ph.D., of the University of Alabama, a copy of a letter which he published in the Birmingham Post, July 29, 1936, which might throw some light on the matter. Dr. Harper is a fiend on figures and statistics, and the ideas he advances are interesting and logical.

He wrote that the Japanese government was disturbed over the recent physical deterioration of the people as shown by examinations of soldiers and school children. Formerly the Japanese were regarded as an unusually healthful race, having made a remarkable showing in this respect during their war with Russia in 1904, when they were less "civilized" than they are today. According to Dr. Harper, there are several influences at work undermining civilization, some of which apparently are beneficial at first but are disastrous in the long run; and Japan seems now to be paying the penalty for imitating Western ways.

One such influence is the saving by medical science of too many weak children, who a generation or two ago might have succumbed in infancy to faulty nutrition, diphtheria or some other infection, but now grow up to have still weaker children, or none; and finally succumb to heart disease, cancer or some other chronic trouble. This danger was pointed out last year by President Cutten, of Colgate University, in an address which was widely commented upon in the newspapers, and also forty years ago by an English physician. To quote briefly from Dr. Cutten: "Of course, the damage is not in prolonging the lives of the unfit in itself, for the end of the generation would be the end of the menace; but prolonging the lives of the unfit to become the breeding stock of the nation is suicidal." My correspondent disposes of this argument by admitting that it is difficult to say what we (or the Japanese) should do about it, because the medical profession would never be guilty of refusing to give a sick child the best possible service. However, among certain hardy tribes of India, the infant who is unable to obtain proper nutrition from its mother's breast is allowed to die. Dr. Harper mentions other debilitating factors such as the substitution of machinery for muscle, which makes people flabby for lack of exercise.

It is to be fervently hoped that the apparent weakening of football players is not an indication of the physical deterioration of American manhood, and that while twenty-five years have been added to the average span of human life in this country during the past seventy years, we are not gaining longevity at the cost of bodily stamina. The highest praise has been bestowed upon modern scientific obstetrics and pediatrics in preserving the lives of millions of infants who would have died in other times; but have the later medical histories of such patients and their offspring been studied and analyzed? Are some of the children

of the present generation descendents of such patients, and is their stamina affected thereby?

At all events there is a tendency today for parents to coddle their children. In many respects life is being made too easy. Forty years ago boys and girls walked two and three miles to school; now they must use an automobile to go around the corner. It is true that certain ones receive excellent physical training in summer camps and like places, but such advantages are enjoyed only by a limited few. Schools and colleges should carry out a more rigid schedule of physical exercises from which no one would be excused except those who are really incapacitated. In most institutions the present program is entirely too casual. Emory University is setting a good example in this regard, in insisting upon athletics for every student. If our children could only re-learn to walk! Babe Ruth could play baseball another ten years if his legs would only hold out. The modern version of an old adage reads: "A man is as old as his knees." The medical profession and the public health service should continue their marvellously successful efforts toward increasing human longevity—*plus stamina*.

PROGRAM

MEDICAL ASSOCIATION OF GEORGIA OFFICERS AND COMMITTEES

1936-1937

EIGHTY-EIGHTH ANNUAL SESSION, MACON,
MAY 11, 12, 13, 14, 1937

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Vice-President	H. C. Atkinson, Macon
Secretary-Treasurer	W. Chas. Boswell, Macon
Librarian	W. E. Mobley, Macon
Delegate	A. R. Rozar, Macon
Delegate	H. C. Atkinson, Macon
Alternate Delegate	A. E. Siegel, Macon
Alternate Delegate	W. W. Chrisman, Macon

COMMITTEES

General Chairman	C. Hall Farmer, Macon
------------------	-----------------------

Arrangements

W. R. Golsan, Macon, Chairman
 O. H. Weaver, Macon
 J. D. Applewhite, Macon
 Harold C. Atkinson, Macon
 Chas. C. Harrold, Macon

Entertainment

Chas. H. Richardson, Macon, Chairman
 Benjamin Bashinski, Macon
 Chas. N. Wasden, Macon
 O. O. Watson, Macon
 Alvin S. Siegel, Macon
 Thos. H. Hall, Macon

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W. A. Newman, Macon, Chairman
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 Lewis L. Rawls, Macon
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Carl Anderson, Macon, Chairman
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 O. R. Thompson, Macon
 H. G. Weaver, Macon
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A. R. Rozar, Macon, Chairman
 Leon D. Porch, Macon
 Evelyn Swilling, Macon
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Thos. L. Ross, Macon, Chairman
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 J. Allen Smith, Macon
 W. W. Chrisman, Macon

Transportation

Jno. I. Hall, Macon, Chairman
 Jas. L. King, Macon
 Walter E. Mobley, Macon
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 Wm. A. Williams, Macon

HONORARY ADVISORY BOARD
 of the

MEDICAL ASSOCIATION OF GEORGIA

Ralston Lattimore.....President, 1913-1914
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 J. G. Dean.....President, 1916-1917
 E. E. Murphey.....President, 1917-1918
 J. W. Palmer.....President, 1918-1919
 J. M. Smith.....President, 1922-1923
 J. W. Daniel.....President, 1923-1924
 J. O. Elrod.....President, 1924-1925
 F. K. Boland.....President, 1925-1926
 V. O. Harvard.....President, 1926-1927
 W. A. Mulherin.....President, 1927-1928
 C. K. Sharp.....President, 1928-1929
 Wm. R. Dancy.....President, 1929-1930
 A. G. Fort.....President, 1931-1932
 M. M. Head.....President, 1932-1933
 C. H. Richardson.....President, 1933-1934
 Clarence L. Ayers.....President, 1934-1935
 Jas. E. Paullin.....President, 1935-1936

COUNCIL

J. A. Redfearn, Chairman.....Albany
 Grady N. Coker, Clerk.....Canton

Councilors

1. C. Thompson (1939).....Millen
 2. J. A. Redfearn (1939).....Albany
 3. J. C. Patterson (1939).....Cuthbert
 4. Kenneth S. Hunt (1939).....Griffin
 5. W. A. Selman (1937).....Atlanta
 6. H. G. Weaver (1937).....Macon
 7. M. M. McCord (1937).....Rome
 8. J. E. Penland (1937).....Waycross
 9. Grady N. Coker (1938).....Canton
 10. S. J. Lewis (1938).....Augusta

Vice-Councilors

1. R. V. Martin (1939).....Savannah
 2. Chas. H. Watt (1939).....Thomasville
 3. J. Cox Wall (1939).....Eastman
 4. Enoch Callaway (1939).....LaGrange
 5. Marion C. Pruitt (1937).....Atlanta
 6. H. D. Allen (1937).....Milledgeville
 7. H. J. Ault (1937).....Dalton
 8. Wm. W. Turner (1937).....Nashville
 9. J. K. Burns (1938).....Gainesville
 10. W. C. McGeary (1938).....Madison

Scientific Work

Geo. A. Traylor, Chairman (1937).....Augusta
 H. C. Sauls (1938).....Atlanta
 Chas. H. Richardson (1939).....Macon
 Edgar D. Shanks, Secretary-Treasurer.....Atlanta

Public Policy and Legislation

C. C. Aven, Chairman (1938).....Atlanta
 Dan Y. Sage (1937).....Atlanta
 J. O. Elrod (1939).....Forsyth
 C. L. Ayers.....Toccoa
 J. L. Campbell.....Atlanta
 Edgar H. Greene.....Atlanta
 S. T. R. Revell.....Louisville
 Edgar D. Shanks, Secretary-Treasurer.....Atlanta
 T. F. Abercrombie, Director, Department
 of Public Health, State of Georgia.....Atlanta

Medical Defense

Frank K. Boland, Chairman (1938).....Atlanta
 Wm. A. Mulherin (1939).....Augusta
 A. R. Rozar (1941).....Macon
 J. A. Redfearn, Chairman of Council.....Albany
 Edgar D. Shanks, Secretary-Treasurer.....Atlanta

Hospitals

R. H. Oppenheimer, Chairman (1937).....Atlanta
 Arthur D. Little (1941).....Thomasville
 D. Henry Poer (1938).....Atlanta
 C. D. Welchel (1939).....Gainesville
 L. P. Holmes (1940).....Augusta

Abner Wellborn Calhoun Lectureship

Jas. E. Paullin, Chairman (1938).....Atlanta
 H. I. Reynolds (1939).....Athens
 Eugene E. Murphey (1940).....Augusta
 J. M. Smith (1941).....Valdosta
 Frank K. Boland (1937).....Atlanta

Economics

Lewis M. Gaines, Chairman (1940)	Atlanta
C. W. Roberts (1938)	Atlanta
C. L. Ridley (1941)	Macon
Day Y. Sage (1937)	Atlanta
J. H. Downey (1939)	Gainesville

*Sub-Committee on Compilation**Medical Economics*

Jas. E. Paullin, Chairman	Atlanta
C. W. Roberts	Atlanta
L. M. Gaines	Atlanta
T. F. Abercrombie	Atlanta
Edgar D. Shanks, Secretary-Treasurer	Atlanta

Necrology

A. J. Mooney, Chairman	Statesboro
J. W. Palmer	Ailey
C. K. Sharp	Arlington

*Medical History of Georgia**Sub-Committee*

Frank K. Boland, Chairman	Atlanta
William R. Dancy	Savannah
Arthur G. Fort	Atlanta
V. H. Bassett	Savannah
Allen H. Bunce	Atlanta

Crawford W. Long Memorial Prize

William R. Dancy, Chairman	Savannah
Stewart R. Roberts	Atlanta
V. P. Sydenstricker	Augusta
George Bachmann	Atlanta
Edgar R. Pund	Augusta

Cancer Commission

Jas. L. Campbell, Chairman	Atlanta
William H. Myers	Savannah
Charles H. Watt	Thomasville
J. C. Patterson	Cuthbert
Kenneth S. Hunt	Griffin
Charles C. Harrold	Macon
W. P. Harbin, Jr.	Rome
Kenneth McCullough	Waycross
Grady N. Coker	Canton
Ralph H. Chaney	Augusta

Advisory—State Board of Health

C. W. Roberts, Chairman	Atlanta
Craig Barrow	Savannah
M. E. Winchester	Brunswick
M. M. McCord	Rome
Marvin H. Head	Zebulon
A. H. Hilsman	Albany
T. F. Abercrombie	Atlanta

*Sub-Committee**Advisory—State Board of Health**Social Security Act*

J. R. McCord, Chairman	Atlanta
O. R. Thompson	Macon
Joseph Akerman	Augusta

Advisory—Woman's Auxiliary

Jas. N. Brawner, Chairman	Atlanta
Wm. R. Dancy	Savannah
W. A. Selman	Atlanta
W. R. Garner	Gainesville
Benjamin Bashinski	Macon

L. G. Hardman Loving Cup

W. A. Selman, Chairman	Atlanta
Wm. A. Mulherin	Augusta
Chas. H. Watt	Thomasville
M. M. McCord	Rome

Post-Graduate Study

G. Lombard Kelly, Chairman	Augusta
Russell H. Oppenheimer	Emory University
Chas. H. Watt	Thomasville
W. W. Chrisman	Macon

Scientific Exhibit

Mark S. Dougherty, General Chairman	Atlanta
Thomas Harrold, Local Chairman	Macon
Lee Howard	Savannah
Everett L. Bishop	Atlanta
J. L. Campbell	Atlanta
W. L. Pomeroy	Waycross
Wm. P. Harbin, Jr.	Rome
Wm. F. Jenkins	Columbus
Roy R. Kracke	Emory University
Fred A. Mettler	Augusta
J. A. Redfearn	Albany
T. F. Sellers	Atlanta
Ernest F. Wahl	Thomasville

*Prize for Hookworm Control**

W. F. Reavis, Chairman	Waycross
E. F. Wahl	Thomasville
H. M. Tolleson	Eastman

*Award by the Ware County Medical Society.

Study of Maternal Mortality and Infant Deaths

H. F. Sharpley, Jr., Chairman	Savannah
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First District

A. J. Mooney	Statesboro
A. J. Waring	Savannah

Second District

W. L. Wilkinson	Bainbridge
W. W. Jarrell	Thomasville

Third District

Herschel A. Smith	Americus
J. C. Patterson	Cuthbert

Fourth District

H. J. Copeland	Griffin
Emory R. Park	LaGrange

Fifth District

E. D. Colvin	Atlanta
J. R. McCord	Atlanta

Sixth District

Otis R. Thompson	Macon
T. C. Clodfelter	Eatonton

Seventh District

P. O. Chaudron	Cedartown
W. Mayes Gober	Marietta

Eighth District

M. E. Winchester	Brunswick
C. M. Stephens	Waycross

Ninth District

Pratt Cheek	Gainesville
Geo. C. Brooke	Canton

Tenth District

S. S. Smith	Athens
John W. Thurmond, Jr.	Augusta

ex officio

T. F. Abercrombie, Director, Department of
Public Health for Georgia Atlanta

*Fraternal Delegate to the
Georgia Dental Association*

R. Hugh Wood Atlanta

*Fraternal Delegate to the
Georgia Pharmaceutical Association*

Glenville Giddings Atlanta

Fraternal Delegates to Other State Meetings

TO VISIT ALABAMA: Wallace H. Clark, LaGrange,
and C. K. Sharp, Arlington.

TO VISIT FLORIDA: Wm. S. Goldsmith, Atlanta,
and Arthur G. Fort, Atlanta.

TO VISIT NORTH CAROLINA: Clarence L. Ayers,
Toccoa, and Grady N. Coker, Canton.

TO VISIT SOUTH CAROLINA: Wm. A. Mulherin,
Augusta, and H. M. Michel, Augusta.

State Board of Health

First District—Cleveland Thompson, Millen, Sept. 1,
1939.

Second District—C. K. Sharp, Arlington, Sept. 1,
1939.

Third District—Mr. R. C. Ellis, Americus, Sept. 1,
1942.

Fourth District—Marvin M. Head, Zebulon, Sept. 1,
1937.

Fifth District—Mr. Robert F. Maddox, Atlanta, Sept.
1, 1942.

Sixth District—A. R. Rozar, Macon, Sept. 1, 1938.

Seventh District—Mather M. McCord, Rome, Sept.
1, 1938.

Eighth District—Henry W. Clements, Adel, Sept. 1,
1938.

Ninth District—L. C. Allen, Hoschton, Sept. 1, 1939.

Tenth District—Wm. A. Mulherin, Augusta, Sept. 1,
1937.

*State of Georgia at Large
Pharmaceutical Association*

T. C. Marshall, Atlanta, Sept. 1, 1941.

W. T. Edwards, Augusta, Sept. 1, 1941.

Georgia Dental Association

J. G. Williams, D.D.S., Atlanta, 1940.

Paul McGee, D.D.S., Waycross, Sept. 1, 1940.

**DISTRICT SOCIETIES
OFFICERS AND MEETING DATES**

First District

President—J. C. Metts, Savannah.

Secretary—Chas. Usher, Savannah.

Third Wednesdays—March and July.

Second District

President—J. R. McMichael, Quitman.

Secretary—J. C. Brim, Pelham.

Second Tuesdays—April and October.

Third District

President—M. L. Malloy, Vienna.

Secretary—Chas. A. Greer, Oglethorpe.

Third Wednesday in June and second Wednesday in
November.

Fourth District

President—Enoch Callaway, LaGrange.

Secretary—Marvin M. Head, Zebulon.

Second Wednesdays—February and August.

Fifth District

President—Olin S. Cofer, Atlanta.

Secretary—D. Henry Poer, Atlanta.

No definite dates.

Sixth District

President—Y. H. Yarbrough, Milledgeville.

Secretary—W. W. Chrisman, Macon.

Last Wednesday in June and First Wednesday in
December.

Seventh District

President—P. O. Chaudron, Cedartown.

Secretary—Wm. Harbin, Jr., Rome.

First Wednesday in April and last Wednesday in
September.

Eighth District

President—T. H. Johnston, Douglas.

Secretary—G. T. Crozier, Valdosta.

Second Tuesday in April and October.

Ninth District

President—R. M. Moore, Waleska.

Secretary—Pratt Cheek, Gainesville.

Third Wednesdays in March and September.

Tenth District

President—Ralph H. Chaney, Augusta.

Secretary—Philip R. Stewart, Monroe.

Second Wednesdays in February and August.

DELEGATES TO THE 1936 SESSION*

Counties

Names and Addresses

Appling

Baldwin

Bartow J. W. Stanford, Cartersville

Ben Hill Lewis Abram, Fitzgerald

Bibb H. C. Atkinson, Macon

A. R. Rozar, Macon

Blue Ridge

Brooks

Bulloch-Chandler-Evans

Burke J. M. Byne, Jr., Waynesboro

Butts

Carroll S. F. Scales, Carrollton

Chatham (Georgia Medical Society)

. J. C. Metts, Savannah

A. A. Morrison, Savannah

Chattooga Inman Smith, Trion

Cherokee C. J. Roper, Jasper

Clarke G. O. Whelchel, Athens

Clayton-Fayette T. J. Busey, Fayetteville

Cobb W. G. Crawley, Jr., Acworth

Coffee H. Goodwin, Douglas

Colquitt C. C. Brannen, Moultrie

Coweta

Crisp H. J. Williams, Cordele

Decatur-Seminole R. F. Wheat, Bainbridge

DeKalb

Dooly E. B. Davis, Byromville

Dougherty H. M. McKemie, Albany

Douglas C. V. Vansant, Douglasville

Elbert J. E. Johnson, Jr., Elberton

Emanuel	J. H. Chandler, Swainsboro	Toombs	
Floyd	W. P. Harbin, Jr., Rome	Tri Society	
Forsyth		Calhoun, Early, Miller	Holt Darden, Blakely
Franklin		Tri Society	
Fulton	C. C. Aven, Atlanta	Liberty, Long, McIntosh	
	Everett L. Bishop, Atlanta	Troup	
	B. Russell Burke, Atlanta	Turner	
	Jas. J. Clark, Atlanta	Twiggs	
	T. C. Davison, Atlanta	Upton	Jno. D. Blackburn, Thomaston
	Ed H. Greene, Atlanta	Walker	
	H. Cliff Sauls, Atlanta	Walton	
	C. W. Strickler, Atlanta	Ware	
Glynn	H. M. Branham, Brunswick	Warren	H. B. Cason, Jr., Warrenton
Gordon		Washington	N. J. Newsom, Sandersville
Grady		Wayne	
Greene		Whitfield	D. L. Wood, Dalton
Gwinnett		Wilcox	Wm. P. Durham, Sasser
Habersham	W. H. Garrison, Clarkesville	Wilkes	H. L. Cheeves, Union Point
Hall	W. C. Kennedy, Talmo	Worth	
Hancock	C. S. Jernigan, Sparta		
Harris			
Hart			
Henry	R. L. Tye, McDonough		
Houston-Peach			
Jackson-Barrow			
Jasper			
Jefferson	S. T. R. Revell, Louisville		
Jenkins	Q. A. Mulkey, Millen		
Lamar	C. H. Willis, Barnesville		
Laurens	J. E. New, Dexter		
South Georgia Medical Society—			
Berrien, Clinch, Cook, Echols, Lanier,			
Lowndes	L. J. Ring, Lenox		
Macon			
McDuffie			
Meriwether			
Mitchell			
Monroe			
Montgomery			
Morgan			
Muscogee			
Newton			
Ocmulgee-Bleckley, Dodge, Pulaski			
Polk	Jno. M. McGehee, Cedartown		
Putnam			
Rabun	J. C. Dover, Clayton		
Randolph	T. F. Harper, Coleman		
Richmond	R. H. Chaney, Augusta		
	G. L. Kelly, Augusta		
Rockdale	P. J. Brown, Conyers		
Screven			
Spalding	A. H. Frye, Griffin		
Stephens			
Stewart-Webster			
Sumter	A. C. Primrose, Americus		
Talbot	Grady L. Carter, Talbotton		
Taliaferro	T. C. Nash, Philomath		
Tattnall	L. V. Strickland, Cobbtown		
Taylor	F. H. Sams, Reynolds		
Telfair			
Terrell			
Thomas	C. H. Watt, Thomasville		
Tift	C. A. Fleming, Tifton		

*This list includes the names of all delegates reported to the Secretary-Treasurer.

ANNOUNCEMENTS

Meetings will be held in the Municipal Auditorium.

Be sure to go to the Registration Desk, present your 1937 membership card and procure a badge immediately on your arrival.

Discussion of papers is open to all members and guests of the Association. It is not limited to those named on the program.

On arising to discuss a paper the speaker will please announce his name and address clearly for the benefit of the Association and stenographer.

Meetings will be called to order at the hour fixed on the program. It is especially desired that the members be prompt in their attendance.

All manuscript should be typewritten, double spaced and on one side of the paper only. Papers must be handed to the Secretary immediately after being read.

IMPORTANT NOTICE!

Delegates must present written credentials to the Committee on Credentials from the house of Delegates to secure Delegates' badges.

Members may not take part in the proceedings until they have registered and procured official badges.

PUBLIC MEETINGS

Eastern Standard Time

Municipal Auditorium

WEDNESDAY, MAY 12, 9:00 A. M.

Opening Meeting

Municipal Auditorium

WEDNESDAY, MAY 12, 8:00 P. M.

Municipal Auditorium

Presentation of the President's Key to the President, Benjamin Harvey Minchew, Waycross, by Charles Wesley Roberts, Atlanta.

Tropical Diseases of Interest to the Southern Physicians

Charges Franklin Craig

Professor of Tropical Medicine, Tulane University of Louisiana School of Medicine, New Orleans, La.

Introduction by Geo. A. Traylor, Augusta.

The Control of Thyroid Diseases in Michigan

Roy D. McClure

Henry Ford Hospital, Detroit, Mich.

Introduction by B. H. Minchew, Waycross.

Address

Olin West, Secretary

American Medical Association, Chicago, Ill.

Introduction by Edgar D. Shanks, Atlanta.

THURSDAY, MAY 13, 12:00 NOON

*President's Address**The Responsibility of the Layman in a
Public Health Program*Benjamin Harvey Minchew,
WaycrossThe President's Address will be at an open session
to which the public and visitors are invited.*Memorial Exercises*A. J. Mooney, Statesboro, Chairman,
Committee on Necrology.

ENTERTAINMENTS

TUESDAY, MAY 11, 9:00 P. M.

Open House Dance at Dempsey Tavern.

WEDNESDAY, MAY 12, 1:00 P. M.

Annual Luncheon, Georgia Urological Society,
Hotel Dempsey.

WEDNESDAY, MAY 12, 6:30 P. M.

Annual Dinner of the alumni of the Emory Uni-
versity School of Medicine at Hotel Dempsey.Annual Dinner of the alumni of the University of
Georgia School of Medicine at Hotel Dempsey.

THURSDAY, MAY 13, 1:00 P. M.

Annual Luncheon, Georgia Eye, Ear, Nose
and Throat Club, Hotel Dempsey.Annual Luncheon, Georgia Pediatric Society,
Hotel Dempsey.

THURSDAY, MAY 13, 7:30 P. M.

*Idle Hour Club*Buffet Supper and Floor Show. Chas. H. Richard-
son, Master of Ceremonies.

Dance—10:00 to 1:00.

SPORTS

WEDNESDAY AND THURSDAY AFTERNOONS

MAY 12 AND 13, 2:30 P. M.

Golf Tournament

MEETING OF THE COUNCIL

The first meeting of the Council will be held in
the Municipal Auditorium, Tuesday, May 11, at 6:30
P. M. Each Councilor will render a written report of
conditions in each county in his district. Other meet-
ings of the Council will be held on the call of the
chairman.

MEETING OF THE HOUSE OF DELEGATES

Municipal Auditorium

TUESDAY, MAY 11, 2:00 P. M.

Eastern Standard Time

First meeting of the House of Delegates.

1. Call to order by the President.
2. Roll call.
3. Appointment of Reference Committees.
4. Reports of officers:
 - President.
 - President-Elect.
 - Vice-Presidents.
 - Parliamentarian.
 - Secretary-Treasurer: Financial report.
 - Report of Delegates to the A. M. A.
 - Preliminary report of the Committee on Medical Economics.
 - a. Scientific Work.
 - b. Public Policy and Legislation.
 - c. Arrangements.
 - d. Medical Defense.
 - e. Hospitals.
 - f. Necrology.
 - g. Cancer Commission.
 - h. History.
 - i. Abner Wellborn Calhoun Lectureship.
 - j. Crawford W. Long Memorial Prize.
 - k. L. G. Hardman Silver Loving Cup.
 - l. Advisory—State Board of Health.
 - m. Advisory—Woman's Auxiliary.
 - n. Special Committees.
5. Reports of Fraternal Delegates.
6. Unfinished business.
7. New business.

TUESDAY, MAY 11, 8:00 P. M.

Eastern Standard Time

Second meeting of the House of Delegates.

1. Call to order by the President.
2. Reading of minutes.
3. Study of Maternal Mortality—Chairman of Com-
mittee.
4. Reports of committees continued.
5. Unfinished business.
6. New business.

FRIDAY, MAY 14, 8:00 A. M.

*Eastern Standard Time**Hotel Dempsey*

Third meeting of the House of Delegates.

1. Call to order by the President.
2. Reading of minutes.
3. Reports of committees.
4. Unfinished business.
5. New business.

OFFICIAL REPORTER

Master Reporting Company Chicago

SCIENTIFIC PROGRAM

The papers for each meeting must be read as sched-
uled on the program.

WEDNESDAY, MAY 12, 9:00 A. M.

Municipal Auditorium

Macon

Eastern Standard Time

Call to order by the President, Benjamin H. Minchew, Waycross.

Invocation

Rev. Albert G. Harris.....Macon

Address of Welcome

Olin H. Weaver.....Macon

Response to Address of Welcome

J. A. Redfearn.....Albany

SCIENTIFIC PAPERS

1. Clinical Consideration of Paranasal Sinus Disease.
Taylor S. Burgess, Atlanta.

To lead the discussion:

G. H. Lang, Savannah.

I. W. Irvin, Albany.

2. Obstruction in Higher Urinary Tract.

Spencer A. Kirkland, Atlanta.

To lead the discussion:

J. C. Keaton, Albany.

Ralph N. Johnson, Rome.

3. Menopausal and Postmenopausal Bleeding.

Jas. N. Brawner, Jr., Atlanta.

To lead the discussion:

G. Lombard Kelly, Augusta.

W. F. Shallenberger, Atlanta.

4. Tannic Acid Treatment of Burns—A Review of 1310 Cases.

J. D. Martin, Jr., Atlanta.

To lead the discussion:

J. C. Patterson, Cuthbert.

R. C. Franklin, Swainsboro.

5. The Physician's Political Obligation.

Thomas Chason, Donalsonville.

To lead the discussion:

Carl C. Aven, Atlanta.

J. T. Holt, Baxley.

WEDNESDAY, MAY 12, 11:20 A. M.

Heart Disease in Middle Life—Lantern Slides.

J. H. J. Upham.

President-Elect of the American Medical Association.
Dean and Professor of Medicine, Ohio State University
College of Medicine, Columbus, Ohio.

Introduction by Allen H. Bunce, Atlanta.

WEDNESDAY, MAY 12, 12:00 NOON

ABNER WELLBORN CALHOUN LECTURE

The Story of the Vitamins in Infant Nutrition.

Isaac A. Abt.

Professor of Pediatrics, Northwestern University
Medical School, Chicago, Ill.

Introduction by James E. Paullin, Atlanta.

WEDNESDAY, MAY 12, 2:00 P. M.

Eastern Standard Time

Municipal Auditorium

1. Choice and Evaluation of Methods in the Treatment of Hemorrhoids.

Marion C. Pruitt, Atlanta.

To lead the discussion:

Geo. F. Eubanks, Atlanta.

A. M. Phillips, Macon.

Symposium on Fractures

2. (a) First Aid and Transportation of Fractured Cases.

Grandy N. Coker, Canton.

(b) The Importance of X-Ray Examinations of Fractures.

H. H. McGee, Savannah.

(c) Treatment of Fractures in a Small Hospital.
Cleveland Thompson, Millen.

(d) Treatment of Compound Fractures.

Robert L. Rhodes, Augusta.

(e) After Treatment of Fractures.

Michael Hoke, Atlanta.

Calvin Sandison, Atlanta.

Lawson Thornton, Atlanta.

(f) The Diagnosis and Treatment of Acute Head Injuries.

Harry L. Cheves, Union Point.

(g) Medico-Legal Aspects of Fractures.

Mr. Grover Middlebrooks, Atty., Atlanta.

To lead the discussion:

J. W. Simmons, Brunswick.

Jno. D. Blackburn, Thomaston.

WEDNESDAY, MAY 12, 8:00 P. M.

Eastern Standard Time

Municipal Auditorium

Presentation of the President's Key to the President,
Benjamin Harvey Minchew, Waycross, by Charles
Wesley Roberts, Atlanta.

*Tropical Diseases of Interest to the
Southern Physicians*

Charles Franklin Craig

Professor of Tropical Medicine, Tulane University
of Louisiana School of Medicine, New Orleans, La.

Introduction by Geo. A. Traylor, Augusta.

The Control of Thyroid Disease in Michigan

Roy D. McClure

Henry Ford Hospital, Detroit, Mich.

Introduction by B. H. Minchew, Waycross.

Address

Olin West

Secretary, American Medical Association, Chicago,
Ill.

Introduction by Edgar D. Shanks, Atlanta.

THURSDAY, MAY 13, 9:00 A. M.

Eastern Standard Time

Municipal Auditorium

1. Acute Hemorrhagic Nephritis in Children with
Special Emphasis on Treatment.

Joseph Yampolsky, Atlanta.

To lead the discussion:

Benjamin Bashinski, Macon.

Ruskin King, Savannah.

2. Acute Infectious Diseases of the Nervous System.

Richard B. Wilson, Atlanta.

To lead the discussion:

John E. Walker, Columbus.

R. C. McGahee, Augusta.

3. Protamine Insulin in the Treatment of Diabetes
Mellitus.

Jas. E. Paullin, Atlanta.
 Wm. R. Minnich, Atlanta.
 To lead the discussion:
 V. P. Sydenstricker, Augusta.
 W. Edward Storey, Columbus.

4. Functional Disturbances of the Gastro-Intestinal Tract.

W. W. Chrisman, Macon.
 To lead the discussion:
 Trimble Johnson, Atlanta.
 H. I. Reynolds, Athens.

5. Treatment and Prophylaxis of Malaria.

Roy A. Hill, Thomasville.
 To lead the discussion:
 Alex W. Freeman, Albany.
 H. M. McGehee, Moultrie.

6. Concerning Primary and Secondary Malignant Tumors of the Choroid.

F. Phinizy Calhoun, Atlanta
 Alton V. Hallum, Atlanta.
 To lead the discussion:
 J. F. Chisholm, Savannah.
 E. L. Bishop, Atlanta.

THURSDAY, MAY 13, 11:30 A. M.

Address

Olin West, Secretary
 American Medical Association
 Chicago, Ill.

Introduction by Edgar D. Shanks, Atlanta.

THURSDAY, MAY 13, 12:00 NOON

President's Address

The Responsibility of the Layman in a Public Health Program

Benjamin Harvey Minchew
 Waycross

Memorial Exercises

A. J. Mooney, Statesboro, Chairman
 Committee on Necrology

THURSDAY, MAY 13, 2:00 P. M.

Eastern Standard Time
Municipal Auditorium

1. *Symposium on Tuberculosis*

(a) The Tuberculosis Situation in the State with Reference to the State Sanatorium.

D. T. Rankin, Alto.

(b) Diagnosis of Tuberculosis.

F. C. Whelchel, Alto.

(c) Medical Aspects of Tuberculosis.

H. E. Crow, Alto.

(d) Indications for Surgery in the Treatment of Pulmonary Tuberculosis.

Daniel C. Elkin, Atlanta.

C. W. Strickler, Jr., Atlanta.

(e) Surgical Treatment of Tuberculosis.

C. D. Whelchel, Gainesville.

(f) A Five Year Comparative Study of Pneumothorax Treatments in the White and Negro Races.

A. Worth Hobby, Atlanta.

To lead the discussion:

J. A. Redfearn, Albany.

H. C. Schenck, Atlanta.

FRIDAY, MAY 14, 9:00 A. M.

Eastern Standard Time

Municipal Auditorium

1. X-Ray Therapy in Carcinoma of the Breast.

Thomas Harrold, Macon.

To lead the discussion:

L. P. Holmes, Augusta.

Jas. J. Clark, Atlanta.

2. Tell-Tale Evidence in Certain Ovarian Tumors—Lantern Slides.

Ralph H. Chaney, Augusta.

To lead the discussion:

W. L. Pomeroy, Waycross.

D. D. Walker, Macon.

3. The Split Skin Graft.

Wm. G. Hamm, Atlanta.

To lead the discussion:

E. D. Highsmith, Atlanta.

C. K. Wall, Thomasville.

4. Tumors of the Brain—A Six-Year Statistical Study.

Ed. F. Fincher, Jr., Atlanta.

To lead the discussion:

Lee Howard, Savannah.

E. L. Bishop, Atlanta.

5. The Treatment of Hernia by Injection.

Enoch Callaway, LaGrange.

To lead the discussion:

A. R. Rozar, Macon.

Richard Binion, Milledgeville.

6. Bacterial Variance in Human Infections.

R. S. Leadingham, Atlanta.

To lead the discussion:

W. H. Lewis, Rome.

Roy R. Kracke, Emory University.

ALTERNATES

1. The Treatment of Diarrhea with Agar-Pectin Custard.

Wm. L. Funkhouser, Atlanta.

2. The Treatment of the Heart in Hypertensive Disease.

Evert A. Bancker, Jr., Atlanta.

3. Appendiceal Stasis—Cecal Stasis.

Trimble Johnson, Atlanta.

FRIDAY, MAY 14, 12:00 NOON

Eastern Standard Time

Municipal Auditorium

Election of Officers

President-Elect.

First Vice-President.

Second Vice-President.

One Delegate to the A. M. A.

One Alternate Delegate to the A. M. A.

Councilors for the Fifth, Sixth, Seventh and Eighth Districts*

Two nominations for the State Board of Health from each of the Fourth and Tenth Districts*

Selection of meeting place for 1938.

*Nominated by their respective district societies.

CONSTITUTION AND BY-LAWS

Chapter II. Section 2. No papers or addresses before the Association, except those of the President and invited essayists, shall occupy more than fifteen minutes in their delivery; and no member shall speak longer than five minutes, nor more than once on any subject, provided that each essayist shall have five minutes in which to close the discussion of his paper.

Chapter VIII. Section 1. The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, when not in conflict with this Constitution and By-Laws.

Chapter VIII. Section 2. All papers read before the Association shall become its property. Each paper shall be deposited with the Secretary when read, and if this is not done, it shall not be published.

No miscellaneous or business matters will be discussed before the scientific meetings, but will be referred to the House of Delegates.

Resolution Adopted 1921

Resolved: That a member who sends in a title of a paper to be placed on the program and is not present to read the paper shall pay the penalty of not having an opportunity to appear on the program for two years, unless he presents an excuse acceptable to the Committee on Scientific Work.

NOTICE TO MEMBERS PARTICIPATING IN THE SCIENTIFIC EXHIBIT

Three certificates of merit, to be known as first, second and third prizes, will be given by the Committee on Scientific Work to the three outstanding exhibits at this session of the Medical Association of Georgia. These will be judged on the first day of the session.

We are instructed by the President to announce to all essayists that the session of the Scientific Program of the Association will begin on time, and that the above regulations of the By-Laws in reference to the program will be strictly enforced.

Committee on Scientific Work

Geo. A. Traylor, Augusta, Chairman
H. C. Sauls, Atlanta
Chas. H. Richardson, Macon
Edgar D. Shanks, Atlanta,
Secretary-Treasurer.

IN MEMORIAM*

Baird, James Madison, Columbus, July 10, 1936, aged 67.
Bridges, Benjamin Lynn, Ellaville, June 24, 1936, aged 63.
Bridges, Robert L. Z., Brinson, February 14, 1937, aged 66.
Cato, Frank Lee, Leslie, October 23, 1936, aged 73.
Cheshire, James Leslie, Damascus, June 17, 1936, aged 53.
Clower, Eugene, Cairo, August 19, 1936, aged 60.
Craig, Alexander, Toccoa, August 12, 1936, aged 53.
Davis, Jefferson, Toccoa, March 30, 1937, aged 71.

Deloach, Luther Asbury, Savannah, November 22, 1936, aged 53.
Freeman, James M., Lavonia, May 16, 1936, aged 67.
Hack, George Byron, Hinesville, June 14, 1936, aged 49.
Hailey, William Isham, Hartwell, October 15, 1936, aged 66.
Hall, James Madison, Hazlehurst, July 25, 1936, aged 60.
Hardman, Lemartine Griffin, Commerce, February 18, 1937, aged 80.
Hodges, Lonie W., Gainesville, September 29, 1936, aged 60.
Liles, William Washington, Gainesville, November 6, 1936, aged 61.
Lozier, Nathaniel Hooks, Sandersville, October 2, 1936, aged 46.
Lynch, Chandler Spinx, Lumpkin, February 20, 1937, aged 48.
McArthur, Thomas J., Cordele, February 15, 1937, aged 68.
McKinney, William T., Cave Springs, June 2, 1936, aged 71.
Moore, Daniel L., Nahunta, June 24, 1936, aged 62.
Moore, William Richard, Cairo, January 8, 1937, aged 70.
Nunnally, Harry Bell, Monroe, May 13, 1936, aged 53.
Odum, Walter M., Brunswick, August 23, 1936, aged 49.
Powell, John Franklin, Eastman, November 28, 1936, aged 77.
Rountree, Manning Alonzo, Reidsville, July 21, 1936, aged 70.
Ward, Leon Colquitt, Damascus, January 31, 1937, aged 61.
Weeks, Daniel H., Nicholls, January 5, 1937, aged 62.
Williams, William P., Blackshear, September 24, 1936, aged 69.

*This is the list of members who have died since our last annual session as it appears on our records. Please notify the Secretary-Treasurer of any errors or omissions.

CONSTITUTION AND BY-LAWS OF THE MEDICAL ASSOCIATION OF GEORGIA

Constitution

ARTICLE I.—NAME OF THE ASSOCIATION.

The name and title of this organization shall be the Medical Association of Georgia.

ARTICLE II.—PURPOSES OF THE ASSOCIATION.

The purpose of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Georgia; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to

guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of state and medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life.

ARTICLE III.—COMPONENT SOCIETIES

Component societies shall consist of those county societies which hold charters from this Association.

ARTICLE IV.—COMPOSITION OF THE ASSOCIATION

Section 1. This Association shall consist of members and delegates.

Sec. 2. Members: The members of this Association shall be the members of the component county medical societies to which only white physicians shall be eligible.

Sec. 3. Delegates: Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component societies in the House of Delegates of this Association.

ARTICLE V.—HOUSE OF DELEGATES

The House of Delegates shall be the legislative body of the Association, and shall consist of: (1) delegates elected by the component county societies; (2) the officers of the Association enumerated in Section 1 of Article IX of the Constitution; (3) ex-presidents and delegates to the American Medical Association.

ARTICLE VI.—COUNCIL

The Council shall be the Board of Trustees and Finance Committee of the Association. The Council shall have full authority and power of the House of Delegates between annual sessions, unless the House of Delegates be called into session as provided in the Constitution and By-Laws.

It shall consist of the Councilors, the President, the President-Elect and the Secretary-Treasurer of the Association. Five of its members shall constitute a quorum.

ARTICLE VII.—SESSIONS AND MEETINGS

Section 1. The annual sessions shall take place on the second Wednesday in May at such place as shall be designated by the Association, provided that in case of conflict with the annual session of the American Medical Association or on petition of the county society of the host city made at least six months before the fixed dates for the annual session, the Council may change the dates by publishing a notice in the JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA three months before the session.

Sec. 2. Special meetings of either the Association or the House of Delegates may be called by a two-thirds vote of the Council, or upon the petition of twenty delegates.

ARTICLE VIII.—SECTIONS AND DISTRICT SOCIETIES

Section 1. The House of Delegates may provide for a division of the scientific work of the Association into

appropriate sections, and for the organization of such Councilor district societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county societies.

ARTICLE IX.—OFFICERS

Section 1. The officers of this Association shall be a President, President-Elect, two Vice-Presidents, a Secretary-Treasurer, a Parliamentarian, and one Councilor for each congressional district in the state.

Sec. 2. The officers, except the Secretary-Treasurer, Parliamentarian and Councilors, shall be elected annually, provided that after the annual meeting of 1928 a President-Elect and not a President shall be elected annually. The President-Elect shall assume his office as President immediately after the next annual meeting following his election. The terms of the Councilors shall be for three years, as may be arranged, viz: the Councilor for the first, second, third and fourth districts for three years; those for the fifth, sixth, seventh, and eighth districts for one year; those for the ninth and tenth districts for two years. The Secretary-Treasurer shall be elected for a term of five years, and the Parliamentarian for a term of three years. All these officers shall serve until their successors are elected and installed. (1933).

Sec. 3. The officers of this Association shall be elected by ballot at 12 o'clock noon on the third day of the annual session. Nomination for office shall be made orally, but the nominating speech must not exceed two minutes. The Councilors shall be elected at the same time on nomination by their respective district societies at the annual meetings of such societies preceding the annual session of the Association at which the vacancies occur, but if no nomination from a district society is brought before the Association, the nomination for Councilor may be presented from the floor. If there is no election on the first ballot, the three names receiving the highest number of ballots shall be voted on, the other names being dropped. If there is no election on the second ballot, the two names receiving the highest number of ballots shall be voted on until an election occurs. Delegates to the American Medical Association shall be elected at the same time and in the same manner.

Sec. 4. The members of the State Board of Health shall be nominated by their respective district societies at the annual meeting of such societies preceding the annual session of this Association, and in failure of nomination by district societies, they may be nominated by the delegates present from each of the district societies, all of which shall be ratified by this Association.

ARTICLE X.—FUNDS AND EXPENSES

Funds shall be raised by an equal per capita assessment on each component society. The amount of the assessment shall not exceed the sum of \$10.00 per capita per annum. Funds may be appropriated by the House of Delegates to defray the expenses of the Association, for publications, and for such other purposes as will promote the welfare of the profession. All resolutions appropriating funds must be approved by the Finance Committee before action is taken thereon.

ARTICLE XI.—RATIFICATION

The House of Delegates shall submit all questions before it to the Association for ratification.

ARTICLE XII.—THE SEAL

The Association shall have a common seal, with power to break, change or renew the same at pleasure.

ARTICLE XIII.—AMENDMENTS

Any amendment that may be offered to the Constitution shall lie over until the next annual session; and for its adoption at such session shall require a two-thirds vote of all present and voting.

By-Laws

CHAPTER I.—MEMBERSHIP

Section 1. The name of a physician on the properly certified roster of members of a component society, which has paid its annual assessment, shall be *prima facie* evidence of membership in this Association.

Sec. 2. Any person who is under sentence of suspension or expulsion from a component society or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 3. Each member in attendance at the annual session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society, he shall receive a badge which shall be evidence of his right to all the privileges of membership at that session. No member shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

Sec. 4. Any member for old age, length of service, or other good reasons, may, upon recommendation of the Board of Censors, be elected to honorary membership of his county society without dues. Such member shall be enrolled as an honorary member of his county society and the Association, and shall be entitled to all the privileges of the Association.

Sec. 5. In addition to regular and honorary members, upon recommendation of the Board of Censors, associate members and intern members may be elected by any constituent county society without the payment of dues. The associate members will be such as may be eligible for regular membership, but not in very active practice and usually with a very limited income—also certain salaried physicians and members of the Army, Navy, U. S. Public Health Service, etc. These are privileged to attend and participate in all scientific meetings, but cannot hold office and do not receive the Journal or benefits of Medical Defense. Intern members are limited to interns in hospitals and are only privileged to attend and participate in scientific meetings. (1933).

Sec. 6. Any physician applying for membership in a component medical society of this Association, who has previously practiced in a county in which affilia-

tion with a component society is provided, and who moves to another county without having affiliated with the medical society in the jurisdiction of previous residence, before he is admitted to membership, the cause for his lack of affiliation in the society of his previous residence shall be ascertained.

CHAPTER II.—GENERAL MEETINGS

Sec. 1. All registered members may attend and participate in the proceedings and discussions of the general meetings. Visitors duly accredited to represent the Association of other states, or of the District of Columbia, not exceeding two in number for each organization, may attend upon, and participate in the discussion of the general meetings, but shall not have a vote. Such delegates may read papers upon invitation of the Committee on Scientific Work. The general meetings shall be presided over by the President or by one of the Vice-Presidents.

Sec. 2. No papers or addresses before the Association, except those of the President and invited essayists, shall occupy more than fifteen minutes in their delivery; and no member shall speak longer than five minutes, nor more than once on any subject, provided that each essayist shall have five minutes in which to close the discussion of his paper.

Sec. 3. Entertainments. Any social entertainment which may be given by this Association shall be confined to the evening of the second day.

Sec. 4. Guests. Any physician not a resident of this state but a member of his state association, or any distinguished scientist not a physician, may be counted a guest during any annual session on invitation of the President, and shall be accorded the privilege of participating in the scientific work of that session.

CHAPTER III.—HOUSE OF DELEGATES

Section 1. The House of Delegates shall meet on the day preceding the first day of the annual session, the time to be fixed by the Committee on Scientific Work. It may adjourn from time to time as may be necessary to complete its business; provided that its hours shall conflict as little as possible with the general meetings. The order of business shall be arranged as a separate section of the program.

Sec. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every fifty members, and one for each fraction thereof, but each component society which has made its annual report and paid its assessment as provided in this Constitution and By-Laws shall be entitled to one delegate. Should the regular delegate from any county not be present at the meeting, the President shall appoint a substitute from that county to act.

Sec. 3. Twenty delegates present shall constitute a quorum.

Sec. 4. It shall, through its officers, council and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each annual session a stepping-stone to future ones of higher interest.

Sec. 5. It shall consider and advise as to the material interest of the profession, and of the public in

those important matters wherein it is dependent on the profession, and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interests of such county societies as already exist, and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall constitute these efforts until, if possible, every physician in every county of the State has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate and research work as well as home study, and shall endeavor to have the results utilized, and intelligently discussed in the county societies.

Sec. 8. It shall divide the State into councilor districts, one for each congressional district, and when the best interests of the Association and profession will be promoted thereby, organize in each a district medical society, and all members of component county societies and no others shall be members in such district societies.

Sec. 9. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates. Such committees shall report to the House of Delegates and may be present and participate in the debate thereon.

CHAPTER IV.—DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and as far as practicable, shall visit, by appointment, the various sections of the State and assist the Councilors in building up the county societies, and in making their work more practical and useful.

In order to give him a better opportunity of becoming more fully acquainted with his duties and with the needs of the Association, the President shall be elected one year prior to taking office. During this time he shall be known as President-Elect and shall be ex-officio member of the standing committees, and shall make recommendations at the next annual session.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, resignation or removal, the Vice-Presidents, in their order, shall succeed him.

Sec. 3. The Secretary-Treasurer shall give bond in the sum of One Thousand Dollars. He shall demand and receive all funds due the Association, together with the bequests and donations.

Sec. 4. The Secretary-Treasurer shall attend the general meetings of the Association and the meetings of the House of Delegates, and shall keep the minutes of

their respective proceedings in separate record books. He shall be ex-officio Secretary of the Council. He shall be custodian of all record-books and papers belonging to the Association. He shall provide for the registration of the members, delegates and accredited visitors at the annual session. He shall, with the cooperation of the secretaries of the component societies, keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society, and on request transmit a copy of this list to the American Medical Association. He shall aid the Councilors in the organization and improvement of the county societies in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistants as may be ordered by the House of Delegates with the approval of the Association, and shall make an annual report to the Association. He shall supply each component society with the necessary blanks for making their annual reports; shall keep an account with the component societies, charging against each society its assessment and collect the same. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Association. He shall be editor of the Journal of the Medical Association of Georgia. He shall employ such assistants as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates.

He shall furnish a balance sheet at each annual meeting for the past fiscal year to be published in the Journal. This shall consist of an itemized statement of all financial transactions of the past year, all accounts made, money received and from whom and all moneys disbursed, to whom, and for what purpose, with vouchers attached. A fiscal year includes the period of time between the first day of May and the last day of April.

CHAPTER V.—COUNCIL

Section 1. The Council shall meet on the day preceding the annual session and daily during the session, and at such other times as necessity may require, subject to the approval of the President. It shall meet on the last day of the annual session of the Association to organize and outline work for the ensuing year. It shall elect a chairman and clerk, who, in the absence of the Secretary of the Association, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates. It shall be the business body of the Association and attend to the business of the Association in the interim between meetings.

Sec. 2. Each Councilor shall be organizer and peace-maker for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exist, for inquiring into the conditions of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred

by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates on a properly itemized statement, but this shall not be construed to include his expense in attending the annual session of the Association. Each Councilor may appoint a Vice-Councilor to assist him in the performance of his duties in that district.

Sec. 3. The Council shall be the board of censors of the Association. It shall consider all questions involving the right and standing of members, whether in relation to other members, to the component societies, or to this Association. All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members of a component society, on which an appeal is taken from the decision of an individual Councilor, or to which attention has been called by the Councilor or interested members. It shall hear and decide all questions affecting unethical conduct on the part of any members at any annual session, and its decision in all such matters shall be final when ratified by the Association.

Sec. 4. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies, to be suitably designated so as to distinguish them from district societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to appoint such assistants to the editor as it deems necessary. It shall manage and conduct the Journal of the Medical Association of Georgia, which is the organ of the Association, and all money paid into the treasury as dues shall be received as subscriptions to the Journal.

All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Secretary-Treasurer of the Association. As the Finance Committee it shall annually audit the accounts of the Secretary-Treasurer and other agents of this Association, and present a statement of the same in its annual report to the House of Delegates, which report shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary. In the event of a vacancy in the office of the Secretary-Treasurer, the Council shall fill the vacancy until the next annual election.

Sec. 6. All reports on scientific subjects and all scientific discussions and papers heard before the Association, shall be referred to the Journal of the Medical Association of Georgia for publication. The editor, with the consent of the Councilor for the district in which he resides, may curtail or abstract papers or discussions, and the Council may return any paper to its author which it may not consider suitable for publication.

Sec. 7. All commercial exhibits during the annual sessions shall be within the control and direction of the Council.

Sec. 8. In the absence of a Councilor and Vice-Councilor the President is empowered to appoint a representative from the district as acting Councilor, who shall have full rights and power of a Councilor.

Sec. 9. Each Councilor shall render at every session a written report of each county in his district.

Sec. 10. Any member of the Council who fails to attend two regular successive sessions of the Council, or whose district does not show evidence of the performance of his duties during the year, unless he renders an acceptable excuse to the Council, is subject to have his position declared vacant by the President and a successor appointed by the President.

CHAPTER VI.—COMMITTEES

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Arrangements.

A Committee on Medical Defense, and such other committees as may be necessary.

Sec. 2. The Committee on Scientific Work shall consist of four members, one of whom shall be the Secretary-Treasurer. The other three members shall be appointed for terms of one, two, and three years, respectively. The vacancy which will occur each year by the expiration of the term of one member shall be filled by the President with an appointment for three years. The member who has the shortest time to serve shall be Chairman. The committee shall determine the character and scope of the scientific proceedings of the Association for each session. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented.

This By-Law shall not prohibit the Committee on Scientific Work from inviting not more than two distinguished members of the national organization to deliver addresses or read papers at any annual meeting.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary, the Commissioner of Health of the State of Georgia, and a sub-committee of three members from each Councilor District appointed by the chairman when needed. It shall represent the Association in securing and enforcing legislation in the interest of public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, state and national affairs and elections.

Sec. 4. The Committee on Arrangements shall be appointed by the component society in which the annual session is to be held. It shall provide suitable accommodations for the meeting places of the Association and of the House of Delegates and, of their respective committees, and shall have general charge of all arrangements. Its chairman shall report an outline of the ar-

rangements to the Secretary-Treasurer for publication in the program, and shall make additional announcements during the session as occasion may require.

Sec. 5. The Committee on Medical Defense shall consist of five members, of whom the Chairman of the Council and the Secretary-Treasurer of the Association shall be members. The other members, one of whom shall act as Chairman of the Committee, shall be elected by the Council for a period of five years. Those elected at this meeting (April 19, 1916), shall serve one, three and five years, respectively.

It shall be the duty of the Committee on Medical defense to investigate and defend all damage suits against the Medical Association of Georgia; to investigate all claims of civil malpractice made against its members; to take full charge of such cases, which after investigation, they decide to be proper cases for defense; to defend all such cases in the courts of last resort, to furnish General Counsel and pay court cost usual to such litigation, and reasonable fees for local attorneys as shall be arranged by General Counsel. Provided that any member who has indemnity insurance shall have such insurance bear its portion of the expense. However, they shall not pay, or obligate the Medical Association of Georgia to pay any judgment rendered against any member upon the final determination of any case. They shall be empowered to contract with such agents or attorneys as they may deem necessary for the proper carrying out of this By-Law.

The assistance for defense, as herein provided, shall be available only to members of the Medical Association of Georgia in good standing. Any member who has not paid his annual dues by April 1st shall not be considered in good standing in the application of this By-Law.

Any member or members of the Association threatened with suit for civil malpractice shall immediately communicate with the Secretary of the Association and shall give full and complete information in reference to all the circumstances alleged in the complaint. The Secretary shall proceed immediately to investigate the circumstances reported and shall advise with the attorneys or agents employed by the Committee for this purpose. The member sued, or threatened with suit, shall be consulted and shall have the complete confidence of the Committee in all transactions connected with the investigation in question. The Committee shall have the authority to require of a constituent society or the president thereof, the appointment of a committee of investigation in any such case, and it may direct the committee so appointed to report to the Committee on Medical Defense and not to the society from which it was appointed.

The Committee on Medical Defense may also, at its discretion, arrange to prosecute illegal practitioners in the State of Georgia and assist in the enforcement of the Medical Practice Act of this State.

CHAPTER VII.—COUNTY SOCIETIES

Section 1. All county societies now in affiliation with this Association, or those which may hereafter be organized in the State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall on application, receive

a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charter shall be issued thereto.

Sec. 3. Charters shall be issued only on approval of the Council, and shall be signed by the President and Secretary of this Association. The Association shall have authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county.

Sec. 5. Each county society shall judge of the qualifications of its own members, but as such societies are the only portals to this Association, every reputable and legally registered white physician who does not practice or claim to practice, nor lend his support to any exclusive system of medicine, shall be eligible to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

Sec. 6. No matter what the unethical conduct or discipline of the members of the county society may be, both plaintiff and defendant shall have the right to appeal to the Council, whose decision shall be final when ratified by the Association.

Sec. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a board and as individual Councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a component county society moves to another county in this state, he shall be given a written certificate of these facts by the secretary of his society, without cost, for transmission to the secretary of the society in the county to which he moves. Pending his acceptance or rejection by the society in the county to which he moves, such member shall be considered to be in good standing in the county society from which he was certified and in the Medical Association of Georgia to the end of the period for which his dues have been paid.

Sec. 9. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the component society in whose jurisdiction he resides.

Sec. 10. Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county; and systematic efforts shall be made by each member and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. At some meeting in advance of the annual session of this Association, each county society shall elect a delegate or delegates to represent it in the House

of Delegates of this Association, in the proportion of one delegate to each fifty members, or fraction thereof, and the Secretary of the society shall send a list of such delegates to the Secretary of this Association at least ten days before the annual session.

Sec. 12. The Secretary of each component society shall keep a roster of its members, and of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 13. The Secretary of each component society shall forward its assessment, together with its roster of officers and members, list of delegates, and lists of non-affiliated physicians of the county, to the Secretary of this Association each year, thirty days before the annual session.

Sec. 14. Any county society which fails to pay its assessment, or make the report required, on or before April 1 of each year, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association, or of the House of Delegates, until such requirement has been met.

Sec. 15. The Secretary of each county society shall report to the Journal of the Medical Association of Georgia full minutes of each meeting and forward to it all scientific papers and discussions which the society shall consider worthy of publication.

CHAPTER VIII.—RULES AND ETHICS

Section 1. The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, when not in conflict with this Constitution and By-Laws.

Sec. 2. All papers read before the Association shall become its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published.

Sec. 3. The principles of medical ethics of the American Medical Association shall be those of this Association.

Sec. 4. Any member of this Association, on locating in a new place for practicing his profession, may place his professional card, containing name, address, telephone number, and statement as to whether or not his practice will be limited to any particular class of disease, in the local paper for a period of not longer than one month. The placing of such card for this period of time shall not be considered unethical. The use of the word "specialist" by any member in connection with his name in any newspaper, telephone directory, or other public places, shall be considered unethical.

CHAPTER IX.—AMENDMENTS

These By-Laws may be amended at any annual session by a majority vote of the Association after the

amendment has lain on the table for one day.

RESOLUTIONS, MEDICAL ASSOCIATION OF GEORGIA

1921

Resolved, That a member who sends in a title of a paper to be placed on the program and is not present to read the paper, shall pay the penalty of not having an opportunity to appear on the program for two years, unless he presents an excuse acceptable to the Committee on Scientific Work.

1922

Be it Resolved, That the House of Delegates recommend that the Committee on Scientific Work make available on the program of the State Association space for two papers from each Councilor district; that a definite time be assigned for reading and discussion of each of these papers, and they be given precedence over all other business. The said papers are to be selected by the Committee on Scientific Work, and, in case a writer does not respond when his name is called, some paper will be substituted and the schedule not deranged. The President ruled that this resolution is only a recommendation and not a law.

1928

Resolved, That the delegates to the A. M. A. elected at this and succeeding meetings of the Medical Association of Georgia be installed January 1st, following their election, and that their term of service run for two years thereafter. And be it further

Resolved, That our delegates be authorized to attend the regular and any called meeting of the House of Delegates of the American Medical Association during the term to which they are elected.

1929

Resolved, That in order to expedite the business of the House of Delegates, all reports of special and regular committees of the Association involving matters of public policy, legislation or appropriation of the funds of the Association be submitted in writing to the Secretary of the Association a sufficient time in advance of the regular annual session, about March 15th, to permit of the publication of said recommendations either in the official program prior to the session or in a special circular that shall be mailed to the constituent societies, in order that the delegates may be advised of the proposed changes.

1936

Resolved, That the House of Delegates set the amount of dues at \$7.00 per capita for the year 1937.

Some of the greatest obstacles to concentration are not due to noises from without, but distractions from within. You want to be doing other things, you have hopes and worries you would rather think about. We speak of a well "integrated" personality as one in which the parts are formed into one whole, no part emotionally at war with another in the nature of the person. From the same root as "integrated" comes "integrity."—P. R. Bureau. Med. Soc. of State of N. Y.

CATERPILLAR BITE (*Megalopyge Opercularis*)

Report of Cases†

THOMAS GOODWIN, M.D.
JOSEPH KRAFKA, JR., M.D.
PHILIP MULHERIN, M.D.
Augusta

Two recent cases of caterpillar bite have occurred in Augusta. Three other cases have been brought to the attention of the authors in the past four years. While the cases are not particularly serious, the terrifying and painful experiences of the patients warrant a brief note to familiarize the profession with the caterpillar and to state that the condition is not "bite" but "nettling." The mouse-like form and the thick matted brownish "fur," together with the clinging habit of the worm give it a very formidable appearance. A natural size photograph, made by Dr. Richard Torpin, is presented as an accompanying figure.

Case 1. Patient of Dr. Thomas Goodwin. On Oct. 2, 1936, the patient, a man and an employee of the city sanitary department, while cleaning up rubbish on a vacant lot, was bitten by a caterpillar. He complained of a severe pain at the bite and a general burning sensation "all over." An injection of adrenalin relieved the pain for a time, only to return when the effect of the adrenalin had worn off. A second injection of 10 minims at the emergency room of the University Hospital seems to have taken care of the situation since the patient did not return.

Case 2. Patient of Dr. Philip Mulherin. On Oct. 7, 1936, the patient, a white girl, was climbing over a fence. The caterpillar got on her finger. She felt a sharp pain and ran into the house with the caterpillar still clinging on. Her mother knocked the worm to the floor. As she did so she too felt a slight sting. When the patient was seen about 30 minutes later, she had a pulse of 120, normal temperature, and complained of severe pain at the site of the bite. The area was red with a slightly elevated papule in the center. The epitrochlea nodes on the same arm could be felt. She was given a 1/20 grain of morphine, after which she went to sleep. She was well the next morning and went to school.

One of the caterpillars was sent to Dr. C. F. W. Musebeck of the Bureau of Entomology, Washington, for species determination. The form proved to be *Megalopyge opercularis*, the larva of one of the flannel moths. Riley and Johannsen, in their Handbook of



Fig. 1.
Natural size photograph of the larva of the flannel moth, *MEGALOPYGE OPERCULARIS*. This specimen "bit" the patient described in Case 1.

Medical Entomology, picture a closely allied species, *Loga crispata*. They also present a discussion of "nettling," as worked out by Tyzzer for the Brown-tail and Gypsy moth larvae. These forms, when touched, produce a painful dermatitis by "nettling" with their poisonous hairs or setae. The hairs have a hemolytic effect in vitro.

Suggested remedies by Riley and Johannsen are cooling ointments, alkalinization with baking soda paste, zinc oxide or lime water. In our two patients, relief of pain was all that was necessary.

In conclusion we may state that other local "nettlers" are the Saddleback and the Puss Moth larvae.

HONOR ROLL FOR 1937

1. Randolph County, Dr. W. G. Elliott, Cuthbert, September 28, 1936.
2. Dougherty County, Dr. I. M. Lucas, Albany, December 12, 1936.
3. Taylor County, Dr. R. C. Montgomery, Butler, January 11, 1937.
4. Crisp County, Dr. L. O. Wooten, Cordele, January 13, 1937.
5. Wayne County, Dr. A. J. Gordon, Jesup, January 23, 1937.
6. Hall County, Dr. Hartwell Joiner, Gainesville, January 27, 1937.
7. Monroe County, Dr. G. H. Alexander, Forsyth, January 30, 1937.
8. Rockdale County, Dr. H. E. Griggs, Conyers, February 1, 1937.
9. Hancock County, Dr. H. L. Earl, Sparta, February 5, 1937.

The first influenza epidemic occurred in 1735. Other serious ones were in 1789, 1807, 1889, 1916.

Without food a man can live for days; without water for hours; without air for minutes.—P. R. Bureau, Med. Soc. of State of N. Y.

The Annual Meeting of the State Board of Health was held at the State Capitol, March 31st. Hon. Robert F. Maddox was re-elected Chairman; Dr. Marvin M. Head, Zebulon, re-elected Vice-Chairman.

†University of Georgia School of Medicine, Augusta.

WOMAN'S AUXILIARY

OFFICERS, 1936-1937

President—Mrs. Wm. R. Dancy, Savannah.
 President-Elect—Mrs. Ralph H. Chaney, Augusta.
 First Vice-President—Mrs. B. H. Minchew, Waycross.
 Second Vice-President—Mrs. Clarence L. Ayers, Toccoa.
 Third Vice-President—Mrs. J. A. Redfearn, Albany.

Recording Secretary—Mrs. Warren A. Coleman, Eastman.
 Corresponding Secretary—Mrs. Lee Howard, Savannah.
 Treasurer—Mrs. W. A. Selman, Atlanta.
 Historian—Mrs. Grady N. Coker, Canton.
 Parliamentarian—Mrs. John E. Penland, Waycross.

COMMITTEE CHAIRMEN

Student Loan Fund
 Mrs. Robert C. Pendergrass, Americus.
Health Films
 Mrs. A. J. Mooney, Statesboro
Public Relations
 Mrs. Wallace Bazemore, Macon.
Doctors' Day
 Mrs. Ernest R. Harris, Winder.

Legislation
 Mrs. Dan Y. Sage, 47 Inman Circle, Atlanta.
Press and Publicity
 Mrs. J. Harry Rogers, 134 Huntington Rd., Atlanta.
Research in Romance of Medicine
 Mrs. D. N. Thompson, Elberton.
Jane Todd Crawford Memorial
 Mrs. Eustace A. Allen, 18 Collier Rd., Atlanta.

INVITATION

In behalf of the Woman's Auxiliary to the Macon Medical Society of Bibb County, we extend a most cordial invitation to all members of the Woman's Auxiliary to the Medical Association of Georgia to attend all meetings and social functions of the State Convention which will be held in Macon, May 11, 12, 13 and 14, 1937.

MR. THOMAS HARROLD, *President,*
Woman's Auxiliary to the Macon
Medical Society of Bibb County.

CALL TO CONVENTION

The Thirteenth Annual Convention of the Woman's Auxiliary to the Medical Association of Georgia will convene at Hotel Dempsey in Macon, May 11-14.

Every County Auxiliary is urged to send as official representatives, its President, two delegates and two alternates.

Officers of the State Auxiliary, its Past Presidents, its Committee Chairmen, its District Managers, and County Presidents are expected to attend the Pre-Convention meeting of the Executive Board, Tuesday, May 11, 8 p.m. at the Hotel Dempsey.

The entire membership and all eligible wives are cordially invited to attend the sessions, which will be held at Hotel Dempsey, May 12 and 13 beginning at 10:00 a.m.

Registration daily, beginning Tuesday, May 11 at Hotel Dempsey.

MRS. WILLIAM R. DANCY, *President.*

P R O G R A M

THIRTEENTH ANNUAL CONVENTION
 WOMAN'S AUXILIARY TO
 MEDICAL ASSOCIATION OF GEORGIA

Hotel Dempsey, Macon
 May 11, 12, 13, 14, 1937

OFFICERS AND COMMITTEES

Executive Board

President—Mrs. William R. Dancy, Savannah.
 President-Elect—Mrs. Ralph H. Chaney, Augusta.
 First Vice-President—Mrs. B. H. Minchew, Waycross.
 Second Vice-President—Mrs. Clarence L. Ayers, Toccoa.
 Third Vice-President—Mrs. J. A. Redfearn, Albany.
 Recording Secretary—Mrs. Warren A. Coleman, Eastman.
 Corresponding Secretary—Mrs. Lee Howard, Savannah.
 Treasurer—Mrs. W. A. Selman, Atlanta.
 Historian—Mrs. Grady N. Coker, Canton.
 Parliamentarian—Mrs. John E. Penland, Waycross.
 Past Presidents of State Auxiliary.
 Presidents of County Auxiliaries.

Chairmen of Standing Committees

Organization—Mrs. Ralph H. Chaney, Augusta.
 Health Education—Mrs. B. H. Minchew, Waycross.
 Hygeia—Mrs. Clarence L. Ayers, Toccoa.
 Scrapbook—Mrs. J. A. Redfearn, Albany.
 Student Loan Fund—Mrs. Robert C. Pendergrass, Americus.
 Health Films—Mrs. A. J. Mooney, Statesboro.
 Public Relations—Mrs. Wallace Bazemore, Macon.
 Doctors' Day—Mrs. Ernest R. Harris, Winder.
 Legislation—Mrs. Dan Y. Sage, Atlanta.
 Press and Publicity—Mrs. J. Harry Rogers, Atlanta.
 Research in Romance of Medicine—Mrs. D. N. Thompson, Elberton.
 Jane Todd Crawford Memorial—Mrs. Eustace A. Allen, Atlanta.

District Managers

First District—Mrs. Cleveland Thompson, Millen.
 Second District—Mrs. H. Turner Edmondson, Moultrie.
 Third District—Mrs. E. B. Davis, Byromville.
 Fifth District—Mrs. Eustace A. Allen, Atlanta.
 Sixth District—Mrs. J. Lon King, Macon.
 Eighth District—Mrs. W. W. Turner, Nashville.
 Ninth District—Mrs. Bruce Schaefer, Toccoa.



MRS. WILLIAM R. DANCY, Savannah
President, 1936-37

Tenth District—Mrs. H. G. Bannister, Illa.

Conventions and Presidents

- 1924—Augusta—(Organization) Mrs. C. W. Roberts, Atlanta, Temporary Chairman.
 1925—Atlanta—Mrs. James N. Brawner, Atlanta.
 1926—Albany—Mrs. Wm. H. Myers, Savannah.
 1927—Athens—Mrs. C. W. Roberts, Atlanta.
 1928—Savannah—Mrs. Paul Holliday, Athens.
 1929—Macon—Mrs. C. C. Hinton, Macon.
 1930—Augusta—Mrs. Marion T. Benson Atlanta.
 1931—Atlanta—Mrs. C. C. Harrold, Macon.
 1932—Savannah—Mrs. Ralston Lattimore, Savannah.
 1933—Macon—Mrs. S. T. R. Revell, Louisville.
 1934—Augusta—Mrs. J. Bonar White, Atlanta.
 1935—Atlanta—Mrs. John E. Penland, Waycross.
 1936—Savannah—Mrs. Ernest R. Harris, Winder.

MACON CONVENTION COMMITTEES BIBB COUNTY MEDICAL AUXILIARY

Headquarters—Hotel Dempsey

MRS. THOMAS HARROLD, Macon
President, Bibb County Medical Auxiliary

COMMITTEES

Arrangements

- Mrs. Benj. Bashinski, Macon, General Chairman.
 Mrs. J. Lon King, Macon.
 Mrs. Chas. Wasden, Macon.

Credentials and Registration

- Mrs. Warren A. Coleman, Eastman, State Chairman.
 Mrs. W. E. Mobley, Macon, Local Chairman.
 Mrs. J. D. Applegate, Macon.

Entertainment

- Mrs. Wallace Bazemore, Macon, Chairman.
 Mrs. W. A. Newman, Macon.
 Mrs. H. G. Weaver, Macon.
 Mrs. Ernest Corn, Macon.

Decorations

- Mrs. Harry Moses, Macon.

Transportation

- Mrs. D. T. Henderson, Macon, Chairman.
 Mrs. W. W. Chrisman, Macon.

Publicity

- Mrs. J. Harry Rogers, Atlanta, State Chairman.
 Mrs. J. C. Anderson, Macon, Local Chairman.
 Mrs. Ernest Corn, Macon.

Hospitality

- Mrs. H. G. Weaver, Macon, Chairman.
 Mrs. W. A. Newman, Macon.

Health Films

- Mrs. A. J. Mooney, Statesboro, State Chairman.
 Mrs. Rhea Richardson, Macon, Local Chairman.
Introduction of Officers and Distinguished Guests
 Mrs. Chas. H. Richardson, Macon.

Timekeeper

- Mrs. C. C. Harrold, Macon.

PROGRAM

Headquarters—Hotel Dempsey

TUESDAY, MAY 11, 1937

Registration

TUESDAY, MAY 11, 8:00 P. M.

Eastern Standard Time

Hotel Dempsey

Executive Board Meeting

ENTERTAINMENTS

TUESDAY, MAY 11, 1937, 9:00 P. M.

Open House. Tavern—Hotel Dempsey

WEDNESDAY, MAY 12, 1:30 P. M.

Luncheon—Hotel Dempsey

WEDNESDAY, MAY 12

Tour of Indian Mounds.

WEDNESDAY, MAY 12, 5:00 P. M.

Garden Tea.

THURSDAY, MAY 13, ALL DAY

Open House—Ridley Hall.

THURSDAY, MAY 13, 8:00 P. M.

Buffet Supper and Dance—Idle Hour Club.

PROGRAM

WEDNESDAY, MAY 12, 1937, 10:00 A. M.

Eastern Standard Time

Hotel Dempsey

Call to order by the President, Mrs. William R. Dancy, Savannah.

Invocation

Rabbi Isaac Marcuson, Macon
 Temple Beth Israel

Address of Welcome

Incoming President, Bibb County Medical Society

Response to Address of Welcome

Mrs. Leron Gary, Jr., Shellman

Introduction of Distinguished Guests

Mrs. Chas. H. Richardson, Macon.

Address

"An Estimate of the Value of the Woman's Auxiliary to the Medical Association of Georgia."

Dr. B. H. Minchew, Waycross

President, Medical Association of Georgia

Address

"The Auxiliary"

Mrs. J. Bonar White, Atlanta

Past President, Woman's Auxiliary to the Southern Medical Association

Report of Entertainment Committee

Mrs. Wallace Bazemore, Macon, Chairman.

Rules Governing Convention Procedure

Mrs. John E. Penland, Waycross, Parliamentarian

Reading of Minutes.

Reports of District Managers.

Reports of County Presidents.

Report of Executive Committee by Chairman.

Reports of Credentials Committee by Chairman, Mrs.

W. E. Mobley, Macon.

Appointment of Special Committees.

Showing of Health Film

Mrs. A. J. Mooney, Statesboro.

THURSDAY, MAY 13, 1937, 10:00 A. M.

Eastern Standard Time

Hotel Dempsey

Call to order by the President, Mrs. William R. Dancy, Savannah.

Invocation

Rev. Randolph Claiborne, Macon

Rector St. James Episcopal Church

Address of Welcome

Mrs. Thomas Harrold, Macon

Past President, Bibb County Medical Auxiliary.

Response to Address of Welcome

Mrs. Clem C. Brannen, Moultrie

Report of Advisory Committee to Woman's Auxiliary

Dr. Jas. N. Brawner, Sr., Chairman, Atlanta.

Address

"Our Mission"

Dr. George A. Traylor, Augusta

President-Elect of the Medical Association of Georgia

Address

"Student Loan Fund"

Mrs. Allen H. Bunce, Atlanta

Past President of the Woman's Auxiliary to the

American Medical Association.

Reading of Minutes.

Report of President.

Reports of Other Officers.

Report of Auditor

Report of Meeting of the Woman's Auxiliary to the A. M. A., Mrs. Luther A. DeLoach, Savannah.

Report of Meeting of the Woman's Auxiliary to the S. M. A., Mrs. Olin S. Cofer, Atlanta.

Reports of Chairmen of Standing Committees.

Report of Resolutions Committee, Chairman.

Report of Courtesy Committee, Chairman.

Report of Credentials Committee, Chairman.

Memorial Services, Mrs. R. S. O'Neal, LaGrange.

Unfinished Business.

New Business.

Report of Nominating Committee by Chairman.

Election of Officers.

Installation of Officers.

Introduction of Officers.

Announcements of New President.

Adjournment.

THURSDAY, MAY 13, 3:00 P. M.

Eastern Standard Time

Hotel Dempsey

Post-Convention Board Meeting

Mrs. Ralph H. Chaney, President.

RULES TO GOVERN THE CONVENTION

1. To gain recognition, a delegate is requested to rise, address the chair, give her name and Auxiliary.
2. No delegate shall speak more than twice on the same subject and is limited to two minutes each time.
3. Reports shall not be read from Auxiliaries which are not represented by delegates, but shall be filed with the Secretary.
4. All original motions or resolutions shall be made by submitting two copies, one to the Chairman of the Resolutions Committee and one to the Recording Secretary.
5. Reports of delegates and District Managers are limited to five minutes.
6. No one is entitled to vote before she is registered. Please be prompt. Meetings will begin at the time stated in program.

FIFTH DISTRICT MEDICAL SOCIETY

The Fifth District Medical Society will meet at the Academy of Medicine, Atlanta, April 29, 1937. Buffet supper will be served at 6:15 P. M. The program consists of *Address of Welcome* by Dr. H. Cliff Sauls, Atlanta, President of the Fulton County Medical Society; *Response to the Address of Welcome*, Dr. B. H. Minchew, Waycross, President of the Medical Association of Georgia; *Pathfinders in Southern Gynecology*, Dr. Frank K. Boland, Atlanta; *The Clinical Value of the Present Preparations of Sex Hormones in Gynecology*, Dr. E. C. Hamblen, Durham, N. C., Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; *Frequent Causes of Dysphagia with Suggestions as to the Management of Esophageal Obstruction*, Dr. Porter P. Vinson, Richmond, Virginia, Professor of Bronchoscopy, Esophagoscopy, and Gastroscopy, Medical College of Virginia.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

SYPHILIS AS A PUBLIC HEALTH PROBLEM

It is estimated by the United States Public Health Service that there are in the United States each year approximately 1,500,000 persons with syphilis who come under treatment for the first time for their infection. Of this number, 518,000 have the early manifestations of the disease. This is an incidence rate of 8.4 per 1,000 of the population. In Georgia, in 1935, there were reported 11,941 new cases of syphilis, and in 1936 the number was 13,953. Whether the increase in the number of new cases reported to the State Department of Public Health is an actual increase or is due to the better reporting of the disease is a question that cannot be answered at this time.

Much work has been done and many books have been written on the origin of syphilis. This is still a debated question and a problem that is not of importance for this paper. I should, however, give credit for the origin of the word *syphilis* to a poem, written by Fracastorius in 1530, entitled "Syphilis sive Morbus Gallicus," in which the symptoms of the disease are clearly described in the principal pastoral character, Syphilis. During the period of 1506-1588 Fernell recognized the necessity of primary inoculation. In 1672 Willis described general paralysis in the insane. In the 18th century Lancisi recognized the relation of aneurysm and syphilis, and about that time Morgagni recognized the visceral lesion. It was not until the 19th century that Hunter described the relationship of venereal disease lesions following self-inoculations, and Fournier stated that syphilis was the only cause of tabes. About that time Wallace established the fact that syphilitic lesions were contagious, and Ricord differentiated between the hard and soft chancre and made manifest the distinction between syphilis and gonorrhea. In 1905 Schaudinn discovered the actual cause of syphilis. In 1906 Wassermann, Neisser, and Bruck introduced the Wassermann reaction and Reichert demonstrated the organism by darkfield examination, all important diagnostic methods for the detection of the disease. In 1907 Michaelis demonstrated the flocculation tests, which principle is the basis of the Kahn, Kline, Hinton, Eagle, and other similar tests of today. In 1910 Ehrlich introduced salvarsan, the 606th formula used in the experimental study of the drug; it was, therefore, called "606." In 1912 Briggs

considered syphilis a communicable disease apart from sex, similar to all other communicable diseases. In 1918 Wagner Juarz utilized successfully malarial plasmodia in the treatment of neurosyphilis. In 1919 the Scandinavian countries began their program on the control of syphilis. We of the United States have just started, in 1936, our venereal disease program—a program which has proved itself so successful in bringing down the syphilitic prevalence in Sweden, from 6,000 cases in 1919 to 500 in 1934.

Parran of the United States Public Health Service states that one out of every ten adults in this country has syphilis. At the present rate of infection with syphilis, four boys and girls between sixteen and twenty years of age, four between twenty and twenty-five, and four between twenty-five and thirty, develop syphilis—or twelve out of every hundred between the ages of sixteen and thirty. Fifty per cent of the syphilitic infections of the present is believed to be contracted innocently, from such causes as kissing, promiscuous use of public drinking cups, domestic help, and the wide-spread infection in lunch-rooms, soda fountains, and road-houses, where food and drinks are served.

The treponema pallidum is a frail, delicate, corkscrew shaped organism and the average length equals that of the diameter of a red blood cell. It dies readily when exposed to air or on drying, but may live for several hours after contamination upon moist towels in warm, darkened places. The spirochetes may live for a short time on warm, moist rims of drinking glasses. The organism is found, after careful search, in almost all syphilitic lesions. The darkfield examination is the principal method in use today in the early diagnosis of the disease.

Syphilis does not enter directly into the blood stream. On the contrary, the organisms enter by the lymphatic system and may not manifest themselves in the blood stream for a period of several days to several weeks. It is during this period that the disease responds most readily to treatment. This stage of the disease is known as *primary syphilis*, or *sero-negative primary syphilis*. During the latter part of the primary stage the blood stream usually becomes infected to the extent that a Wassermann reaction will show positive. The primary stage may be so mild that the examiner and person infected get the idea that the lesion is innocent; will cause little or no ill effects, healing frequently of its own ac-

cord; and will not require the patient to present himself for further examination. During this stage the disease is highly infectious. Every open lesion that lasts over one week should be looked upon with suspicion until complete examination proves otherwise.

From the primary stage of syphilis the disease passes into the *secondary*, or second stage. During this period there are usually secondary manifestations, or eruptions over the body, to aid in the diagnosis of the disease. These manifestations are often so mild that they may go unnoticed even by the skilled eye of the physician. Moore, of Johns Hopkins University, makes the statement that one man out of five and one woman out of three have such mild secondary lesions that they go unrecognized. He is of the opinion that every physical examination should not be considered complete until after a blood Wassermann is made. During the second stage of syphilis the blood Wassermann is positive in 95 to 99 per cent of the cases.

The third stage of syphilis has been defined as the stage of the disease in which *no outward signs or symptoms may manifest themselves*, or the "blind" stage. It has been classed by some authorities as similar to the termite, which gives no warning until the under-structures of a building have been destroyed and all the damage done. Syphilis in the third stage may attack the heart, blood vessels, liver, lungs, and, for that matter, any organ in the body, and may do untold damage before it manifests itself symptomatically. Sir William Osler made the statement: "Know ye, syphilis and all other diseases shall be added unto ye."

The fourth stage of syphilis is *neuro-syphilis*, under which classification are tabetics, paralytics and insanity. It is this phase of the disease that cripples a large number of its victims, rendering this group unable to hold any job or responsibility and placing upon the taxpayers of our country a great cost that could have been alleviated had the drive for the control of the disease started earlier.

There are four methods of control of the venereal diseases. The first is *education*, by means of public talks to civic and lay organizations, newspaper propaganda, pamphlets and radio broadcasts. Heretofore very little cooperation has been received along this line because the people would not attend talks of this nature, thinking they might prove embarrassing; newspapers would not print the facts of venereal diseases for fear that it might hurt their daily circulation. Much of this taboo has been overcome in the recent months, and thanks are due news editors and editorial writers for their cooperation.

The second method of control is by *prophylaxis*, both chemical and physical. This method of control has proved valuable in such organized groups as the army, navy and other military organizations where direct supervision over the groups is possible. Where it is possible to render prophylaxis it is always desirable to do so.

The third method of control is *the treatment of the infected individual*. This procedure has been used for patients presenting themselves to doctors' offices and the success of any method of treatment depends upon what was taught the doctor and what discussions he may have read or heard in regard to the disease. This method of control has been remunerative to the so-called "quack" because he has been able to tell the patient that he could cure him by giving three or four injections of arsphenamine. This, in most cases, would be enough to enable the "quack" to present a negative blood Wassermann report to the patient. By no means, however, is the patient cured of the disease after such treatment. It has been shown by five of the largest clinics in the United States, through compiled and pooled data, that to get the best results by treatment methods, the doctor should follow a continuous system of treatment, administering at least one dose of drug each week with no rest periods until at least twenty injections of each—the arsenicals and heavy metals—have been given. With the minimum amount of the drugs administered, the clinical reports show a relapse in only two per cent of those cases treated early in their development. If the patient is examined by darkfield examination and found to be in the primary sero-negative phase of the disease, compiled figures show that the individual has 92 to 95 per cent chance of cure. If the patient waits until the sero-positive phase of the disease, the percentage drops down to 60 to 65 per cent cures. If the disease is diagnosed in the late secondary stage the percentage of cures drop still further, to about 50 per cent.

The fourth method of control is by *contact follow-up*, on which work has been done by Dudley Smith of the University of Virginia. By this method many doctors and public health departments have been able to contact and place under treatment early as many as ten to twelve new cases of syphilis, through follow-up on one new infectious case of syphilis, at a time when the greatest percentage of cures can be obtained. I have tried this method and by following-up one case was able to bring under treatment, during the sero-negative phase of the disease, twelve new infections. If syphilis is to be controlled by medical or public health authorities the chain of events must be broken in the early stage of the disease.

Syphilis in the New-Born

This phase of the disease has been greatly neglected throughout Georgia. In 1935 there were 3,987 stillbirths in Georgia. According to clinical reports from the above-mentioned clinics, a large percentage of the stillbirths were caused by syphilis. A great number of those cases could have been prevented by treatment of the mother during the first few months of pregnancy. The clinic reports have shown that 83 per cent of the babies born of untreated syphilitic mothers are born syphilitic, whereas if the mothers are examined before the fifth month of pregnancy and found to have syphilis, continuous treatment until the birth of the baby will give from 92 to 95 per cent of the babies a chance to be born normal and healthy, against only 17 per cent of the untreated cases. If the mother is placed under treatment after the fifth month of pregnancy, the percentage of congenital syphilitic babies drops markedly, even though only two or three injections of the drug have been administered.

We of the Georgia State Department of Public Health are soliciting the earnest cooperation of the medical profession of Georgia: (1) in the reporting of the venereal diseases; (2) in establishing clinics, cooperating with the local medical profession, for the treatment of the indigent cases referred to that clinic by the physicians; (3) in following-up all contacts given by the infected individual, to see if by the contact any other individual has become infected; (4) in keeping under treatment all cases of syphilis until they have the best chance of being cured by adequate treatment; (5) in the event the infected person should discontinue treatment, in reporting such an individual to the Health Department, so that we may cooperate with the local physicians in seeing that necessary treatment is obtained.

S. ROSS BROWN, M.D., *Assistant Chief
Division of Venereal Disease Control.*

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5. Moore, Joseph Earl: *Development of Adequate Treatment Facilities for Control of Syphilis*; J. A. M. A., Sept. 5, 1936.
6. Casselman, A. J.: *Efficient Laboratory Service in the Syphilis Control Program*; J. A. M. A., Sept. 12, 1936.
7. Stokes, John H.: *Education of the Physician and the Movement for Venereal Disease Control*; J. A. M. A., Sept. 12, 1936.
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BOOK REVIEWS

Ocular Therapeutics. By Sanford R. Gifford, M.A., M.D., F.A.C.S. Professor of Ophthalmology. Northwestern University Medical School. Chicago, Ill.; Attending Ophthalmologist, Passavant Hospital, Wesley Memorial Hospital, Evanston Hospital, Cook County Hospital. Pp. 341, illustrated with 60 engravings. Second Edition. Lea & Febiger, Philadelphia, 1937. \$3.75.

This hand-book should always be within easy reach of the ophthalmologist, as well as the general practitioner who gives first aid to eye injuries. This is a thorough revision of the previous edition of 1932, and brings up-to-date the therapeutic procedures which have proven themselves effective in the hands of the author or in those of ophthalmologists whose opinion is considered of undoubted value. Only the essentially valuable procedures are discussed in a concise clear manner. A full index makes the contents of the book quickly available.

In this edition will be found discussions of the vitamins and glandular extracts as they apply to ophthalmology, the use of heat and cold, contact dermatitis of the lids, conjunctival argyrosis, certain types of keratitis and corneal dystrophy not considered in the first edition, and a short chapter on diseases of the orbit. He discussed retinitis pigmentosa and myopia briefly, and attempts to evaluate the efforts at therapy. The chapter on Physical Therapy has been revised and a large part re-written.

ALTON V. HALLUM, M.D.

Urological Roentgenology. By Miley B. Wesson, M.D., Ex-President American Urological Association and Howard E. Ruggles, M.D., Roentgenologist to University of California Hospital, St. Luke's Hospital, and Clinical Professor of Roentgenology, University of California Medical School. Cloth. Price \$5.00. Pp. 269, with 227 illustrations. Philadelphia: Lee & Febiger, 1936.

This book opens with a short chapter summarizing the history of urography. It gives in a brief but impressive way the different urologists who have helped put urography on the map. The next chapter deals with the technic of urography, then follows a series of chapters giving the numerous anomalies of the genito-urinary tract, showing the ideal methods for discovery of these conditions, as well as the proper procedure after discovery is made. Subsequent chapters deal with all phases of urography. This book is well written and contains a most wonderful outlay of cuts on the genito-urinary tract. I can recommend the book to any physician desirous of obtaining complete urographic information on the genito-urinary tract. I would especially recommend this book to one whose reading time is limited. I have never seen more information on the genito-urinary tract compiled in 269 pages.

SPENCER A. KIRKLAND, M.D.

Synopsis of Ano-Rectal Diseases. By Louis J. Hirschman, M.D., with one hundred and seventy-four text illustrations and six color plates. Price \$3.50. The C. V. Mosby Company, St. Louis, Mo., Publish-

ers. 1937.

This synopsis of anal and rectal diseases is thoroughly and concisely presented. Illustrations show the importance of proctoscopic examinations in all cases of apparently minor ano-rectal conditions. There is an excellent chapter on local or regional anesthesia, emphasizing the non-sleeping types of anesthetics.

This is a good book for the general practitioner and an excellent book for medical students. Well illustrated surgically, but little information is given on the modern injection treatment of hemorrhoids.

HULETT H. ASKEW, M.D.

Theory and Practice of Psychiatry. By William S. Sadler, M.D., published by C. V. Mosby Co., St. Louis, Mo.

Dr. Sadler's book is unique in both size and content. Since, however, Anthony Adverse and Gone With The Wind have set the vogue for thick editions one can scarcely call attention to this as a drawback.

This book is a new departure from the average treatise on psychiatry in that it includes many things which are possibly somewhat outside the orthodox. Such rather practical additions as the chapter on religion, philosophy and others of similar ilk are highly commendable since we see practically no discussion of these certain aspects in the general run of psychiatric literature.

Dr. Sadler's book serves a very definite purpose and fills a very definite place.

W. W. YOUNG, M.D.

Year Book of Pediatrics, edited by Isaac A. Abt and Arthur F. Abt, Northwestern University. Price \$2.50; Year Book Publishers, Chicago.

It has been my pleasure to have reviewed this volume in past years. The high standard of this work is maintained in this, the 1936 volume.

Pediatric literature has increased tremendously in volume during the past few years and as each year passes it becomes more difficult for the editors of this book to abstract all of the papers published in this field of medicine. This book represents progress in the field of pediatrics as seen through the abstraction of as many of the advances in the year's literature.

The general outline and subject matter conforms to the volumes of recent years. At the present time the subjects of vitamins and virus diseases are attracting great interest of investigators and clinicians and these subjects are indeed well covered in this book. Allergy also receives more attention than heretofore given it.

There are a few papers on the aims and significance of children's hospitals which will be of interest to men on the staffs of this type hospital.

The book serves as a very valuable reference not only to pediatricians, but to men in general practice.

DON F. CATHCART, M.D.

COUNTIES REPORTING FOR 1937

Elbert County Medical Society

The Elbert County Medical Society announces the following officers for 1937:

President—J. E. Johnson, Elberton.

Vice-President—Geo. A. Ward, Elberton.

Secretary-Treasurer—A. S. Johnson, Elberton.

Delegate—J. E. Johnson, Jr., Elberton.

Alternate Delegate—D. N. Thompson, Elberton.

Censors—D. V. Bailey, J. E. Johnson and D. N. Thompson.

Wilcox County Medical Society

The Wilcox County Medical Society announces the following officers for 1937:

President—S. R. Mitchell, Pineview.

Vice-President—J. M. C. McAllister, Rochelle.

Secretary-Treasurer—J. D. Owens, Rochelle.

Delegate—W. P. Durham, Abbeville.

Alternate Delegate—J. M. C. McAllister, Rochelle.

Clarke County Medical Society

The Clarke County Medical Society announces the following officers for 1937:

President—J. Weyman Davis, Athens.

Vice-President—Jno. A. Simpson, Athens.

Secretary-Treasurer—Lewis S. Patton, Athens.

Worth County Medical Society

The Worth County Medical Society announces the following officers for 1937:

President—W. C. Tipton, Sylvester.

Vice-President—J. L. Tracy, Sylvester.

Secretary-Treasurer—Gordon S. Sumner, Sylvester.

Censors—H. S. McCoy and J. J. Crumbley.

Chattooga County Medical Society

The Chattooga County Medical Society announces the following officers for 1937:

President—R. E. Talley, Trion.

Vice-President—H. D. Brown, Summerville.

Secretary-Treasurer—Inman Smith, Trion.

Delegate—Inman Smith, Trion.

Alternate Delegate—J. L. Bennett, Trion.

Censors—J. J. Rodgers, Trion, and J. L. Bennett, Trion.

Upson County Medical Society

The Upson County Medical Society announces the following officers for 1937:

President—C. A. Harris, The Rock.

Vice-President—B. L. Bridges, Thomaston.

Secretary-Treasurer—Jno. D. Blackburn, Thomaston.

Delegate—Jno. D. Blackburn, Thomaston.

Alternate Delegate—R. L. Carter, Thomaston.

Turner County Medical Society

The Turner County Medical Society announces the following officers for 1937:

President—H. M. Belflower, Sycamore.

Vice-President—W. L. Story, Ashburn.

Secretary-Treasurer—J. H. Baxter, Ashburn.

Lamar County Medical Society

The Lamar County Medical Society announces the following officers for 1937:

President—D. W. Pritchett, Barnesville.

Vice-President—J. A. Corry, Barnesville.

Secretary-Treasurer—S. B. Traylor, Barnesville.

Delegates—C. H. Willis, Barnesville.

Rabun County Medical Society

The Rabun County Medical Society announces the following officers for 1937:

President—J. C. Dover, Clayton.

Secretary-Treasurer—J. A. Green, Clayton.

Delegate—J. C. Dover, Clayton.

NEWS ITEMS

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on March 4th. Dr. F. M. Martin, Shellman, was the principal speaker.

DR. LUTHER C. MITCHELL, formerly of Sandersville and on the staff of Rawlins Sanitarium, has removed to Brunswick and will continue the practice of medicine and surgery in his new location.

DR. GEORGE C. BROOKE, Canton, for many years the efficient Secretary-Treasurer of the Cherokee-Pickens Counties Medical Society, has been at Tulane University of Louisiana School of Medicine, New Orleans, for a number of weeks taking post-graduate work in pediatrics.

DR. CHAS. C. HARROLD, Macon, spoke on the *Control of Cancer as a Public Health Problem* at a meeting of leaders of the State Federation of Women's Clubs and other civic organizations in Macon on February 11th.

THE STAFF MEETING of Crawford W. Long Hospital, Atlanta, was held on March 11th. DR. DON F. CATHCART reported cases which *Involved Problems in the New-Born*. Moving picture showing the procedure in *Collapse Therapy* was shown.

THE STAFF MEETING of Grady Hospital, Atlanta, was held on March 9th. DR. HAROLD L. POOLE reported case studies on *Prontosil in Erysipelas*; DR. E. D. HOLLAR and DR. L. P. MATTHEWS submitted follow-up and autopsy specimens on case of *Calcified Heart*; DR. C. W. STRICKLER and DR. FRANK K. BOLAND presented a case for diagnosis and treatment.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on March 9th. DR. CHAS. USHER read a paper entitled *Surgical Treatment for Cancer of the Large Intestine*; discussed by DR. T. P. WARING and DR. W. A. NORTON. DR. L. W. WILLIAMS reported a case, *Technic and Results of Hemorrhoidectomy Using Nupercaine in Oil*.

DR. J. D. APPLEWHITE, Macon, Bibb County Commissioner of Health, sponsors a plan to supply individual cottages for patients with advanced cases of tuberculosis in Macon and Bibb County.

DR. J. E. PENLAND, Waycross, spoke on the *Prevention of Cancer* at a public meeting held in the Y. M. C. A. building at Waycross on March 10th. The Ware County Medical Auxiliary sponsored the meeting.

DR. D. S. REESE, Carrollton, has spent several weeks in Chicago taking post-graduate work.

THE SURGICAL ASSOCIATION of the Atlanta and West Point Railroad Co., Western Railway of Alabama and the Georgia Railroad held its Seventeenth Annual Session at the Winecoff Hotel, Atlanta, March 30th. The scientific program consisted of titles of papers as follows: *Treatment of Burns with Tannic Acid*, Dr. Goodwin Ghesling, Greensboro; the discussion was led by Dr. R. O. Lee, LaGrange, and Dr. S. L. Waites, Covington, *The Emergency Care of General Injuries*, Dr. C. E. Wills, Washington; discussion

led by Dr. C. W. Harvey, Hogansville, and Dr. P. M. Lightfoot, Shorter, Ala. *Treatment of Fresh Wounds*, Dr. J. Weyman Davis, Athens; discussion led by Dr. C. W. Churchill, Thomson, and Dr. R. B. Hagood, Lowndesboro, Ala. *Fractures of the Pelvis*, Dr. P. Y. Donald, Selma, Ala.; discussion led by Dr. Geo. A. Traylor, Augusta, and Dr. W. C. McGeary, Madison. *Late Pulmonary Embolus in Fractures*, Dr. John P. Garner, Atlanta; discussion led by Dr. J. Calvin Sandison, Atlanta, and Dr. J. R. Penton, Montgomery, Ala. *Cerebral Arteriosclerosis in Railroad Employees*, Dr. Wm. Carter Smith, Atlanta; discussion led by Dr. V. P. Sydenstricker and Dr. Eugene E. Murphey, Augusta. PRESIDENTIAL ADDRESS—*Medicine in a Changing Era*, Dr. Ed H. Greene, Atlanta. *Head Injuries Complicated by Infection*, Dr. James W. Davis, Statesville, N. C. SYMPOSIUM—COMPRESSION FRACTURES OF THE SPINE: *The Surgical Aspect*, Dr. Richard Binion, Milledgeville; *X-Rays*, Dr. F. P. Boswell, Montgomery, Ala.; Mr. Barnes E. Sale, Atlanta, Dr. L. P. Holmes, Augusta; *The Orthopedic Aspect*, Dr. Lawson Thornton, Atlanta, and Dr. H. M. Michel, Augusta; *The Neurological Aspect*, Dr. Ed F. Fincher, Jr., Atlanta. *Fractures Below the Knee*, Dr. W. J. Williams, Augusta; discussion led by Dr. Harry Moses, Macon, and Dr. W. W. Harper, Selma, Ala. *The Uterus in Railroad Accidents*, Dr. Dan Y. Sage, Atlanta; discussion led by Dr. Floyd W. McRae, Atlanta, and Dr. W. H. Clark, LaGrange. *Immediate Attention to the Injured Eye*, Dr. Lewis S. Patton, Athens; discussion led by Dr. Thos. H. Hall, Macon, and Dr. Herschel C. Crawford, Atlanta. Officers for 1936-37 are: Dr. Ed H. Greene, Atlanta, President; Dr. Richard Binion, Milledgeville, Vice-President. Executive Board: Dr. J. R. Garner, Atlanta, Chairman; Dr. Hugh M. Lokey, Atlanta; Dr. R. H. Fike, Atlanta; Dr. Dan Y. Sage, Atlanta; Dr. H. Cliff Sauls, Atlanta; Dr. J. R. Garner, Atlanta, Chief Surgeon.

THE FIRST DISTRICT MEDICAL SOCIETY met at the Millen Community House, Millen, March 17th. Titles of papers on the scientific program were: *Physiology in Medical Practice*, Dr. John W. Daniel, Savannah; *Thoracic Empyema with Complications—Case Report*, Dr. Julian K. Quattlebaum, Savannah; *The Limitations of Routine Blood Counts*, Dr. Lee Howard, Savannah; *Tubed Pedicle Graft—Case Report and Lantern Slides*, Dr. M. J. Epting, Savannah; *Some Facts About Lumbosacral Pathology as Revealed by the X-Ray*, Dr. H. H. McGee, Savannah; *The Maintenance of Body Fluid Balance*, Dr. L. J. Hahne, Savannah.

THE NINTH DISTRICT MEDICAL SOCIETY met at the Toccoa Woman's Club, Toccoa, March 17th. Titles of papers on the scientific program were: *Some Problems in Tuberculosis*, Dr. S. A. Petroff, Trudeau, N. Y.; discussion led by Dr. F. C. Whelchel, Alto. *The Postoperative Care of the Acute Abdomen*, Dr. W. A. Selman, Atlanta; discussion led by Dr. C. D. Whelchel, Gainesville. *Address*, Dr. Allen H. Bunce, Atlanta. *Some Observations in the Treatment of Children*, Dr. C. L. Ayers, Toccoa; discussion led by Dr. B. B. Davis, Gainesville. *Address*, Dr. B. H. Minchew, Waycross, President of the Association.

THE JENKINS COUNTY MEDICAL SOCIETY sponsored a Chest Clinic which was held at the county courthouse in Millen on March 5th.

DR. FRANK K. BOLAND, Atlanta, made the Crawford W. Long Day address at the University of Georgia, Athens, on March 30th.

DR. T. C. DAVISON, Atlanta, was elected President-Elect of the Southeastern Surgical Congress at Charlotte, N. C., March 8th.

THE THOMAS COUNTY MEDICAL SOCIETY met at the Archbold Memorial Hospital, Thomasville, March 17th. Dr. Enoch Callaway, LaGrange, was a guest and spoke on *Methods of Vaginal Hysterectomies* and illustrated his address with moving pictures; Dr. Arthur D. Little, Dr. C. K. Wall and Dr. C. H. Watt, all of Thomasville, led the discussion. Dr. T. A. Futch, Jr., Thomasville, read a paper entitled, *The Early Diagnosis of Pregnancy*. A chicken dinner was served. The next meeting of the Society will be held at Thomasville on June 16th.

THE STAFF MEETING of St. Joseph's Infirmary, Atlanta, was held on March 23rd. Dr. Geo. A. Williams, Dr. Calhoun McDougall and Dr. James E. Paullin discussed *Streptococci Septicemia*.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on March 23rd. Dr. J. W. White, Orthopedic Surgeon, Shriners Hospital for Chipped Children, Greenville, S. C., was a guest and read a paper on *Progressive Bone Growth Deformities and Reformities*; the discussion was led by Dr. M. J. Epting and Dr. L. B. Dunn. Dr. J. S. Howkins reported a case, *Lyponysis* (Bacoti).

THE TRI-COUNTY MEDICAL SOCIETY (Calhoun, Early, Miller) met at the Arles Hotel, Arlington, on March 16th.

DR. THEODORE BENJAMIN DAVIS, Newnan, aged 80, a graduate of the College of Physicians and Surgeons of Baltimore, Maryland, class of 1881, after more than a half century of active practice has retired, according to the Newnan (Georgia) Herald, and gave his collection of surgical instruments and library to Dr. Fred Manget for the use of a Chinese hospital.

THE UPSON COUNTY MEDICAL SOCIETY met at Thomaston on March 11th. Officers were elected for the ensuing year.

THE SPALDING COUNTY MEDICAL SOCIETY met at the Strickland Memorial Hospital, Griffin, on March 16th. Dr. Frank K. Boland, Atlanta, spoke on the *Surgical Treatment of Pulmonary Tuberculosis*; Dr. Jack Norris, Atlanta, explained the *Original Research Work for Treating Syphilis of the Heart*; Dr. Kenneth S. Hunt, Griffin, reported on the Eighth Annual Assembly of the Southeastern Surgical Congress, held at Charlotte, N. C., March 8, 9, 10.

THE SECOND DISTRICT MEDICAL SOCIETY met at Tifton, April 9th. The scientific program consisted of titles for papers as follows: *Toxemia During the Last Trimester of Pregnancy*, by Dr. O. R. Thompson, Macon; discussed by Dr. C. A. Fleming, Tifton. *Coronary Thrombosis*, Dr. Henry M. McGehee, Moul-

trie; discussed by Dr. Ernest F. Wahl, Thomasville. *The Treatment of Bone Fractures*, Dr. W. A. Newman, Macon; discussed by Dr. Frank K. Neill, Albany. *Management and Care of the New-Born*, Dr. Frank Thomas, Albany; discussed by Dr. J. C. Brim, Pelham. *Urology*, Dr. R. F. Wheat, Bainbridge; discussed by Dr. Rudolph Bell, Thomasville.

DR. JOSEPH YAMPOLSKY, Atlanta, was a guest speaker at the meeting of the Tennessee State Pediatric Society at Knoxville, April 13th. His subject was *A Comparative Study of the Use of Acetarsone and Other Drugs in the Treatment of Syphilis in Children*.

DR. MORRIS FISHBEIN, Chicago, Editor of the Journal of the American Medical Association, lectured at the Georgia State College for Women in Milledgeville on April 2nd. He spoke on *Fads and Quackery in Healing*.

DR. I. H. ETHERIDGE, Atlanta, was elected Grand Exalted Ruler of Lodge No. 78, B. P. O. E., Atlanta.

THE SECRETARY-TREASURER of the Association has been requested to locate a physician with license to practice in Florida. The communication in part states: "I know of a first-class location in this section for a young doctor with Florida license; it is not necessary that he be a surgeon. He should have ability, personality and energy. A man of this type can make real money. This town is on the East Coast and has a wonderful class of people." If interested, write the Secretary-Treasurer.

THE FULTON COUNTY MEDICAL SOCIETY met at the Academy of Medicine, Atlanta, April 1st. Dr. R. S. Leadingham reported a case, *Rat Bite Fever—Demonstrated Organisms*; Dr. J. Harris Dew, case report, *Type of Repair of Femoral Hernia*; Dr. W. F. Shallenberger, clinical talk, *Tubal Insufflation—Rubin Test*; Dr. Jas. J. Clark, paper, *The Roentgenological Treatment of the Leukemic States*. The discussion was led by Dr. Roy R. Kracke, Dr. Glenville Giddings and Dr. J. W. Landham.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, April 1st. Dr. Loren Gary, Jr., Shellman, read a paper entitled, *Symptomatic and Specific Treatment of Pneumonia*.

THE SEVENTH DISTRICT MEDICAL SOCIETY met at Calhoun, April 7th. Titles of scientific papers on the program were: *Mandelic Acid in the Treatment of Urinary Tract Infections*, by Dr. W. H. Hall, Calhoun; the discussion was led by Dr. J. J. Rodgers, Trion, and Dr. Frank Easley, Dalton. *Eye, Ear, Nose and Throat Conditions which Confront the General Practitioner*, Dr. Ralph McCord, Rome; discussed by Dr. H. J. Ault, Dalton, and Dr. G. M. White, Rockmart. *Jaundice*, Dr. D. Lloyd Wood, Dalton; discussed by Dr. W. G. Crawley, Acworth, and Dr. H. S. McGowan, Cartersville. *The Surgical Management of Gallbladder Disease*, Dr. D. Henry Poer, Atlanta; discussed by Dr. Trammell Starr, Dalton, and Dr. J. T. McCall, Rome. *Important Aids to Thyroidectomy*, Dr. Lester Harbin, Rome; discussed by Dr. W. M. Gober, Marietta, and Dr. N. A. Funderburk, Trion. *The Problems of Cross-Eyed Children*, Dr. Geo. B. Smith, Rome; discussed by

Dr. J. E. Billings, Fairmount, and Dr. R. C. Maddox, Rome. The members were guests of the Gordon County Medical Society. Dinner was served at the First Methodist Church.

THE UNIVERSITY OF GEORGIA School of Medicine, Augusta, held a successful post-graduate course March 15-19, inclusive. Sixty-three physicians from various parts of Georgia and South Carolina attended. Professor Walter Schiller of the Frauen Klinik, University of Vienna, was guest lecturer. Other lecturers included Edgar R. Pund, Virgil P. Sydenstricker, Everett S. Sanderson, G. Lombard Kelly, Righton Robertson, Tom Goodwin, John Brittingham, John Wright and Robert Greenblatt. The course covered a series of 14 hours of lectures and demonstrations on sex endocrinology and pathology by Walter Schiller and another series of lectures and clinics on the diagnosis and treatment of the five venereal diseases by members of the faculty. Chancroidal bacillary antigen and Frei antigen were distributed to the registrants of the course.

OBITUARY

Dr. Chandler Spinx Lynch, Lumpkin; member; Emory University School of Medicine, Atlanta, 1914; aged 48; died unexpectedly of heart disease at his home on February 20, 1937. He was a native of Stewart County and resided there, except while away attending literary and medical schools, all his life. Dr. Lynch had practiced in Stewart and adjoining counties for more than twenty years. He was charitable and one of the county's best citizens. He enjoyed an extensive practice and had many close friends. Dr. Lynch served in the Medical Corps of the United States Army during the World War, for many years was county physician and continued in that capacity until his death. Dr. Lynch was a member of the Stewart-Webster Counties Medical Society, Lion's Club, Triangle Club and the Lumpkin Baptist Church. Surviving him are his widow and one son, Chandler S. Lynch, Jr. Funeral services were conducted from the Lumpkin Baptist Church by Rev. Lloyd C. Douglas, assisted by Rev. Shell. Interment was in East Side cemetery. The physicians of Stewart, Webster and Randolph counties were honorary pallbearers.

Dr. James B. Gurley, Loganville; Emory University School of Medicine, Emory University, 1893; aged 76; died at his home on February 23, 1937. He was an active practitioner for more than forty years. Was one of Walton County's esteemed citizens. Dr. Gurley had been affiliated with a number of secret orders and was a consecrated member of the Loganville Baptist church. Surviving him are his widow, three sons, Blake, Hugh and James B. Gurley, Jr. Funeral services were conducted by Rev. George W. Hulme, Monroe, from the Loganville Baptist Church. Interment was in the village cemetery.

Dr. Homer Head, Dahlonego; University of Georgia School of Medicine, Augusta, 1900; aged 70; died at his home on March 10, 1937. He was a Major in the Reserve Corps of the United States Army for thirty years. For many years he was a prominent physician in Lumpkin and adjoining counties. Dr. Head was at-

tentive to his professional duties, his family and one of North Georgia's best citizens. Surviving him are his widow, one daughter, Mrs. J. A. Green, Jr.; one son, Homer Head, Jr.

NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL

Dr. James P. Croce has been appointed Professor of Internal Medicine at the New York Polyclinic Medical School and Hospital.

Dr. Howard S. Jeck has been appointed Professor of Urology at the New York Polyclinic Medical School and Hospital.

The New York Polyclinic Medical School and Hospital has opened its new X-ray Department. Entirely new and up-to-date equipment has been installed in the new building. The installation is completely shock-proof. There are five radiographic rooms to cover all phases of diagnostic roentgenology, and a shockproof mobile Unit is included, as well as a complete X-Ray Therapy Department.

Dr. Charles Gilmore Kerley, Emeritus Professor of Pediatrics at the New York Polyclinic Medical School and Hospital delivered a special afternoon lecture on Wednesday, April 14th, 1937 at 2:30 P. M., on *Making Milk Safe for Babies*. (A review of the progress made during the past 50 years, with lantern slides of photographs depicting pioneers in improved milk conditions.)

NEW MEMBERS FOR 1937

Andrews, Agnew, Thomasville
Brewer, A. M., Tunnel Hill
Bridges, E. C., Bainbridge
Brown, Lester A., Atlanta
Claiborne, T. Sterling, Atlanta
Collins, J. J., Thomasville
Collinsworth, A. M., Atlanta
Corbitt, Melvis O., Augusta
Futch, T. A., Jr., Thomasville
Gibson, F. N., Thomson
Hagood, M. M., Marietta
Howkins, J. S., Savannah
Lamm, J. Herman, Atlanta
McClung, R. H., Atlanta
Oliphant, J. B., Sparks
Palmer, J. I., Thomasville
Pittman, O. C., Commerce
Sale, H. M., Sharon
Simpson, R. A., Washington
Smith, E. F., Habira
Smith, J. R., Habira
Talley, J. V., Nashville
Taylor, L. B., Savannah

The Julius Rosenwald Fund has made a grant of \$165,000 over a five-year period, to the Committee on Research in Medical Economics, it was announced by Edwin R. Embree, president of the Fund. This Committee has recently been incorporated in New York, with Michael M. Davis as chairman, the other members being Robert E. Chaddock, Professor of Statistics,

Columbia University; Henry S. Dennison, President, Dennison Manufacturing Company, Framingham, Mass.; Walton H. Hamilton, Professor of Law, Yale University and Director, Bureau of Research, Social Security Board, Washington; Elvin S. Johnson, Director, New School for Social Research, New York; Paul U. Kellogg, Editor, The Survey Graphic, New York; Harry A. Millis, Professor of Economics, University of Chicago; Fred M. Stein, retired banker, New York.

SULFANILAMIDE

New Chemo-therapeutic Agent for Treatment of Streptococcic Infections

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THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., May, 1937

Number 5

DO WE WANT NATIONAL SICKNESS INSURANCE*†

WILLIAM H. MYERS, M.D.
Savannah

A famous sociologist once said that sickness insurance is the panacea offered by politicians to curb social unrest.

The people of this country generally were satisfied with the extent and character of the medical services which they were receiving, but a few years ago the Committee on the Cost of Medical Care, financed by several rich Foundations, spent a million dollars compiling data to fill several volumes, in an effort to establish a basis for intelligently presenting the subject to the people to be influenced. The majority report is so far afield it has little value except in bolstering the opinions of those who supplied the funds. To any one familiar with the difficulties confronting the Committee, their results are not surprising, for there seems to be no means of obtaining accurate statistics on the cost of medical care.

Since the Committee made its report, the propagandists and others have in season and out kept up a bombardment of the public through the press, over the radio and by debate. The defects of the present system are held by them to be very grave, and they are willing to impair the progress that is being made in an effort to correct minor imperfections of medical practice. These faults are not, in general, those of the medical profession, but are almost entirely due to economic stress. This situation, they believe, would be corrected by Sickness Insurance.

"The various forms of social insurance are largely efforts directed toward meeting the uncertainties created by industrialism. Regardless of any apparent differ-

ences, unemployment, old age, accident and sickness insurance are all essentially insurance against poverty.

"Because of the recognition that poverty is today largely due to social causes, there is a general recognition of a social duty to relieve it. Social insurance is, therefore, purely a phenomenon of industrial society. This community relationship did not exist in the days of feudalism, when personal relations were strongly interwoven, and community interests were limited. These personal relations have been largely supplanted by industrialism, and in the words of Sir Henry Main, 'contract' was substituted for 'status' as a basis of human relations. The individual can no longer turn to his guild, his church, or his overlord for relief at the time of misfortune, but is bound to his employer by a wage contract that provides for a reward only while working, and which can be terminated without his consent at any time."

All professions, and especially that of medicine, have been compelled to fight in order to preserve their services to the community, and to resist efforts to mould them into some form of industrialism. These, in brief, are some of the remote reasons why the medical service in this country has become the object of attack from various sources and groups.

"Of sickness insurance, actuaries say that when it most nearly approaches insurance it is not even then insurance, because it is not a definite calculable risk, as all true insurance is and must be. True insurance rests upon the law of probability of regular recurrence of events, where great numbers of those events are considered. Too many variables constantly enter into the problem to make sickness and the cost of medical services determinable in advance. So social insurance is a misnomer."

The first instance of national sickness insurance was that established in Germany in 1883. Bismarck sought to allay the restlessness of the Socialists by advocating sickness insurance, but in so doing he did not foresee the strengthening effect it would have on these same voters. So Germany has the oldest and undoubtedly the world's worst system of sickness insurance. Changes have taken place gradually until there are now forty-two nations with some form of national sickness insurance, with Germany at

*Read before the First District Medical Society, Statesboro, March 18, 1936.

†Liberal use is made of material from the Bureau of Medical Economics of the American Medical Association.

the bottom, and England, France and the Scandinavian countries at the top of the list. *The value of any system in these countries is directly proportionate to the degree of influence maintained by the medical profession.* England's law was made operative in 1911, and would have had all of the bad features of the German plan, but at a cost of \$150,000 and an immense amount of work, the British Medical Association kept the state from taking full control and leaving the physicians with no influence in the management of their own affairs, a worth while effort. In France and Scandinavia the medical profession still holds considerable influence, and like England, has largely divorced medical service from cash benefits; however, changes are constantly taking place in the systems in all of these countries, and even the merest outline of any of them cannot be given in the space allotted.

It seems that proponents of social insurance take it for granted that a government is usually efficient and honest, and that their proposed plan will equalize the distribution of wealth and thus abolish poverty. A great many more advantages are also promised, but are we likely to realize much from them?

A few of the provisions of the bills introduced into Congress are understandable to the most of us. The Federal Government proposes to pay part of the money, the employee a part and the employer a part. Each state legislature will have to pass an act providing for the setting up of the machinery for operation. The affairs will be under the Social Security Board of three at Washington, and each state which passes such laws as meet with the approval of the Federal Board will have a similar board. Collections are made and sent to the Board, which issues stamps through the postoffice to cover the benefits to the insured.

It is interesting to note that any and all states that have no social security laws must contribute funds to the Federal Treasury just the same. This seems unfair, for if Georgia is too poor to take advantage of this plan, she must nevertheless pay to support the scheme in other states that put such plan into operation. Employers are allowed to deduct from their income tax 90 per cent of the sum they contribute. Thus the government is able to

realize 10 per cent of this as profit. It would seem that the fair thing would be to allow the whole amount to be so deducted.

Advocates of state medicine do not distinguish the difference between the practice of medicine by private physicians, which is individual service, and the duties of the state regarding community health. These are separate and distinct functions. All agree that the state must exercise full control in matters of public health, since police power is necessary in this field, and unified action is necessary in reducing the incidence of disease and control of epidemics.

We all know that the fundamental principle in the practice of medicine is inspiration of the patient by the physician, with confidence and hope in his recovery, and ultimate restoration to usefulness. This is important, but it cannot be expected in the proposed plan. Is it usual for a physician of the state or nation to spend sleepless nights in anguish because the life of some ward of the government whom he is treating hangs in the balance? We all know perfectly well that it is not. The relationship between patient and physician is naturally very close, but will change under any other system.

There are many who believe that state medicine would be a great advance in the relief of distress and suffering. *But they forget that there is no provision for the indigent in the proposed plan. It provides only for those who work and pay a part of their wages into the several treasuries. The indigent still must be provided for.* As it is, the worker does not make enough to pay large bills to any one. But in sickness he can get the services of good and competent physicians without pay, if he has always been fair and honest in his dealings with them. They say the worker has to pay so much when sickness comes. Yes, that is true, but to whom does he pay? Our hospitals are endowed with every comfort and equipment. These increase the cost of medical care greatly, but little of the money gets into the physician's pocket.

The question is, does the average American family pay too much for medical service when compared to some very common luxuries which they enjoy? Let us make some comparisons. The average family spends an-

nually \$130 for motor cars, \$67 for tobacco, \$37 for candy, \$34 for drinks and chewing gum, \$25 for radios and musical instruments, but only \$24 for the service of his physician.

If sickness insurance is solely in the interest of health, and if the state is so interested in preserving the health of the people, why does it not put a stop to exploitation of patent medicines, and thus prevent three hundred fifty million dollars from being so spent? And, too, quacks take toll of about one hundred twenty-five million dollars yearly from the gullible. The state could easily prevent this expenditure.

The complaints about the cost of medical care would be changed if only the public would stop to consider that fees of physicians have not increased in proportion to other aspects of medical care, and are not really responsible for much of the increased cost. People are no longer satisfied with cheap or moderate accommodations, but demand the best. Still, the cheap and moderate accommodations are as good as the best of a generation ago. And these improvements, of necessity, increase the cost of medical care. The hospital as well as the physician has to have equipment that entails an outlay that was not possible a generation ago, and this costs also. It should be kept in mind that educating a physician today is a different matter to what it was in 1900. The minimum requirement is now a two-year course in an accredited college and four years more in an approved medical school. But many of the better medical schools require three and four years' college work before admission to the study of medicine. In addition to the four years in medical school, one or two years' internship is required. Thus, more time is given to education, which has raised the average age of entering the practice of medicine to 26 against 22 years a third of a century ago.

The medical profession feels much pride in its accomplishments. To mention them would necessitate reference to almost every human ailment, for progress has been in almost every phase of medical practice, especially in the field of preventive medicine. Look at tuberculosis, the incidence of which has dropped from 275 per hundred thousand in

1905 to 56 per hundred thousand today. Look at yellow fever, which has nearly disappeared from the earth. Look at typhoid fever, the presence or absence of which is the index to the sanitary intelligence of a community, and to malaria, smallpox and many others, all of which are controlled when our knowledge of prevention is applied.

A great many people are of the opinion that the Social Security program provides for every contingency and every person. But in the bills introduced into Congress, no provision is made for taking care of the farmer or pauper. Of these two classes, the farmer is most in need of improved medical service, for he has little, while the pauper has much done for him. The reason for this is largely due to the fact that the country physician has gone to town because of educational and economic reasons, and left rural sections in need of physicians. The poor we shall always have with us, but the government makes no provision in this legislation for giving them better medical attention.

One complaint against our system is that physicians are mercenary, but careful study of the returns from practice shows that 40 per cent of the work of physicians is without remuneration. It has always been so, and of this we do not complain. It is not claimed, however, that we are so saintly that we render the same service to charity patients that we do to those who are more fortunate. That is too idealistic.

Advocates of state medicine say that physicians would have more time for research if the state employed them. Research is a highly specialized and expensive department of science, and the clinician, by the very nature of his work, can not do research of much real value. By comparison, we have not done so badly. Look at Germany. Fifty-three years ago, the medical profession there was a veritable parade of the giants, while today there are few who are known outside of their own country. Their morbidity has trebled instead of falling.

Who wants socialized medicine? Certainly not the physician, for we have declared in no uncertain terms our determined opposition to it. Certainly not union labor, for organized labor has at no time aligned itself in any considerable numbers in favor of this

movement. Certainly not industry, for industry groans under a burden of taxation, which with that added by compulsory health insurance may well prove sufficient to break the patient camel's back. Certainly not the vast majority of people, for one finds among them no real cause for dissatisfaction with the character of the medical services that they are receiving.

After all is said and done, any system of medical service must be judged by its success in reducing morbidity and mortality, for this is the specific duty of physicians. No existing system of state administered medical care can stand this test. In not one of these systems have mortality and morbidity declined so rapidly as in our own country.

A grave defect in state medical service is the increase that takes place in mental disturbance among the participants. Various studies have led to the conclusion that from 40 per cent to 75 per cent of illness among the insured is complicated by mental disturbances, which require for their relief, time, patience and sympathetic understanding, and these are only found where a close confidential relationship exists between the patient and physician. If the patient is trying to get something back for the payments that he has made, the "will to get well" is destroyed and this tends to further increase his mental disturbance.

We are told that there is an overwhelming demand for sickness insurance, that its coming is inevitable, and that opposition is hopeless. Measured by publicity, the movement does seem to have remarkable strength. Measured by facts, concerning the actual workings and accomplishments of such systems, it appears far less formidable. But thirty millions of dollars backing a few paid propagandists can make considerable noise, and that is where the trouble for us starts. The well intentioned but misguided philanthropists who gave the money to create these foundations are told what they wish to believe and see but one side of the question.

Sickness insurance involves compulsory labor by physicians on terms fixed by those who control the system. This will destroy the best in us, and is the cause of deterioration under all such systems. We are individualists and do not advance under regimentation.

Who is to be benefited by it? The advocates usually do not want it for themselves, but for what they choose to call the underpaid class of workers. Practically all of those who fight for such insurance fall within the classes of professional philanthropists, social workers, employers, and very recently, politicians. Some of these have long sought to standardize and mechanize the practice of medicine, make it conform to business patterns, and thus destroy the personal relations between physician and patient, with the idea that they will improve the status of someone, and at least regulate our profession, which seems to be the paramount issue.

Professional philanthropy and social welfare have created a new profession, that of social workers, which, according to the census of 1930, has more than 80,000 members. It is true that sickness insurance reduces the cost of physicians' services, but wherever it has been operated, one social worker for each physician has been found to be necessary in giving medical service, so *that two must be paid for what one now does* and the quality of service is reduced, for after all, medical service is the service of a physician. The result is that there is a struggle for control by the social workers on the one hand, who wish to use business methods instead of the age-long relationship between physician and patient, while on the other side is the physician, who refuses to be dominated by laymen, for he feels that he is best suited to choose what is best for the medical profession.

Distribution of physicians, like the distribution of commercial products, is uneven. The cities are crowded and the rural sections have none. But the way to solve that problem is not by the proposed scheme of insurance. The changing character of our civilization has caused most all serious cases of illness to be taken care of in hospitals. This has made the lot of the country doctor hard, for he loses practically all of his patients who are able to get for themselves good service, and is left to attend the unremunerative patients. He soon takes up residence in some center where he will have hospital facilities.

Physicians in this country are proud of the service that they have given the people. We point to the fact that our sick rate is as

low, if not lower, than most of the large countries of the world. We can also point to the fact that we have not refused treatment to the poor because they had no money. Recently the Bureau of Economics of the American Medical Association reported the fact that there are few people in the United States really suffering for lack of medical care. A survey was made and it was proven by the mayors of one hundred cities of various sizes that there is no neglect of the poor because of their inability to pay physicians. It is not claimed that all people get adequate medical attention. Neither do they all get adequate food and clothing. No one condemns the merchant for these deficiencies, so why should an effort be made to seriously disturb a noble profession because some do not get the medical attention that is necessary? It may be indifference on the part of the individual.

The workings of sickness insurance vary considerably, but in most of the insurance systems, a physician gets a group or panel of 1,000 to 1,500 persons whom he is supposed to attend when sick, and in some countries he may have private practice if he is able to attract it. Since doctors are human, the tendency is to give less attention to those coming under insurance than to those of his private practice. Since this satisfies both the patient and the physician, recovery is more readily brought about. The system in England pays about \$2.00 a year for each insured person, but this does not include the family of the insured. Since the average insured person gets about four house visits and eight office calls a year, the doctor realizes about 16 cents for each patient whom he attends. He can only realize a maximum of about \$2,000 annually from panel practice. Such practice may be our lot if the Supreme Court can be brow-beaten or weakened.

But at that, the service is not cheap, for much medicine and many appliances are used. In a recent report of the insurance act in Scotland, it was found that one patient had received 800 pounds of boric acid ointment in eight years for the treatment of a chronic skin disease. The waste in useless and high-priced pharmaceutical preparations is very great.

In Germany, inefficiency and abuses are

greater than elsewhere. There the physician gets about 8 to 10 cents for each patient seen, and the number of days lost average $28\frac{1}{2}$ a year, against 6.2 for our country, and $5\frac{1}{2}$ for their own country before the system was adopted. Vacations are commonly taken while the insured gets his sick benefits. A noted German writer states that it costs twice as much to render medical service to the 35,000,000 insured as to the 30,000,000 uninsured German people.

Of course, in any system, the lower one-third or one-half of the medical profession is taken to attend the insured. So, the character of service is certainly not the best when rendered by the poorly qualified and inexperienced physician. Insurance puts great strain upon the consciences of the physicians, for they must certify to the sickness before the insured can get pay for the time lost by sickness. *"Soldiering" and malingering are encouraged by this combination of sickness and cash benefits, which is the most pernicious feature of any system.*

The cost of insurance rapidly increases, for as shown in Germany, the annual cost at the beginning was 600,000,000 marks, but now has reached the huge sum of 11,000,000,000 M, and instead of paying 26 weeks' benefits, as originally planned, they are now obliged to pay for only six weeks', and this is usually not paid on account of a deficit. Originally the cost was about 6 per cent of the pay-roll, but now it averages around 18 per cent with a maximum of 28 per cent, as in the case of miners.

Mr. Rexford Tugwell admits that none of the systems in use in Europe would be acceptable to the American people. The English system was found to be unsuited to the sparsely settled portion of northern Scotland and changes had to be made to meet the needs of the varying conditions. But in our own country we are urged to adopt a uniform system for all of our states, some of which are individually larger than all of the British Isles put together.

What is wrong with National Health Insurance? Proponents of health insurance claim that much has been done, but the British Medical Association is today actively engaged in trying to find new plans and improved methods of advance, as is the medical

profession of the United States. One proposal is a general plan for giving medical care to all the British people, and adding specialists' care in the London area. This association has noted the almost entire absence of laboratory service and diagnosis in the panel system, and is trying to have this added. It has added this feature in some counties, as in the Birmingham plan, the British Provident Association and others. So, instead of insurance solving the problem of rendering better medical service, our British confreres remain in about the same predicament as we are in this country. If we are to judge by the plans submitted, there is recognition, if not acceptance, of the inevitability, but not yet of the desirability, of complete socialization of medicine in Great Britain.

Advocates of sickness insurance would lead one to think that no effort is being made in the United States to improve medical service for the low income classes. Yet in no country has so much been done, prior to introduction of insurance, as in this country. Nowhere else was there such a network of private and public hospitals, clinics and sanitoriums furnishing free or low cost service. In no other country have health insurance departments so extended their functions in cooperation with private practitioners to provide immunization and other forms of prevention, even curative services, as here.

Light is thrown upon our President's plans for Social Insurance by quoting Mr. Abraham Epstein, Executive Director of the American Association for Social Security, and one of the best known authorities on the subject, who in an article in the December, 1935, Harper's Magazine, entitled "Social Insecurity," said:

"On the 14th of August, President Roosevelt signed the Social Security Act. Surrounded by flood lights, news-reel cameras and a squad of reporters and administration dignitaries, the Chief Executive gave his approval to a piece of legislation which almost defies analysis and which few understand. There was applause for the bill which the President described as laying the 'cornerstone in a structure . . . intended to lessen the force of possible future depressions,' and providing for the United States 'an economic structure of vastly greater soundness.' But who knew what was in the bill or what it really meant?"

Congress accepted and blindly passed during its last session all of the President's Social Security program, with the exception

of Sickness Insurance. A bill providing for this has been promptly introduced and may become a reality before this session ends. However, excessive initial cost and uncertainty as to its constitutionality may cause a delay in its passage, but there is every reason to believe that it will finally be enacted.

Quoting from Epstein again: "*This bill would impose the largest amount of taxation of any measure ever passed by any Congress, but there was scarcely a ripple of criticism by the public, and practically no debate in Congress.* Bold and socialistic as the promise of the President seemed, a great many climbed upon the band-wagon of social security. Even after the enactment by Congress of a bill that is a perfect labyrinth of constitutional and administrative puzzles, the newspapers with tiresome reiteration have hailed it as 'the advent of a new social order'—'the beginning of a new era'—'humanity's greatest boon' and 'the translation of the Cross of Christ, the life of the world.' **These are strange words coming as they do from a socialist.**

"The dangers," he says, "which lurk behind this scheme doom it from its birth. It attempts the most ambitious program so far undertaken by any nation. With the exception of a few exempted classes, such as agriculture, it covers every employer and every employee, regardless of his earnings. The plan contemplates the building up of the most gigantic reserve, estimated at fifty billions of dollars by 1980—more than four times the value of all of the gold reserve of the world's central banks and governments. The freezing of so much sorely needed purchasing power can not but hamper recovery—and the investment of so huge a sum will prove insuperable. At any rate, such a vast sum would hold unlimited possibilities for graft, mismanagement and loss by inflation."

Some are looking for the "solution" of this social problem. But social problems are not solved. All that happens is that some progress is made toward a better situation which practically always opens up new problems.

There is another way to approach this problem besides trying to overthrow the entire system that has existed for thousands of years, through which some of the most deadly diseases have been abolished and the ravages of many others greatly reduced. That way, we think, is to attack the abuses that have grown up in the present system and preserve and expand the good points.

The underlying principle that guides all of the movement of the organized medical profession is improving and strengthening the direct personal relationship between the patient and physician. After all, there is no way by which good medical service can be given except where the patient and physician

meet on terms of confidence, and everything that disturbs this relationship is harmful to the character of the service.

Conclusions

1. It is not a measure of prevention against disease, but is basically a relief measure.

2. It does not meet the problems of caring for the indigent sick, but only applies to those who work.

3. Insurance is urged as of greatest necessity for "catastrophic" illnesses with their large expenses. But the hurried diagnoses rendered, necessary by the mass treatment of minor illnesses, lessens the probability of detection and proper treatment of more serious conditions in their incipient states.

4. Insurance does not reduce the amount of disease or perceptibly affect mortality.

5. There is no evidence that insurance in any country has reduced the costs of medical care. The sums expended under insurance are larger than were spent under private practice. Insurance only changes the method of collecting medical costs and the distribution of the burden.

SYPHILITIC AND NONSYPHILITIC PERSONS ON FULTON COUNTY, GEORGIA, RELIEF ROLLS: COMPARATIVE STUDY

J. G. McDaniel, Atlanta, Ga. (*Journal A. M. A.*, April 3, 1937), investigated the prevalence of syphilis among the unemployed in Fulton County, Georgia, on the FERA rolls, and compared the chief complaints and physical condition of those men found to have syphilis with a given number of those not having syphilis and tried to determine whether syphilis has any effect on the physical capabilities of a man to earn a livelihood. The presence of the disease was determined by the blood Wassermann test. Clinically, the study proves conclusively that syphilis may attach itself to any structure of the body. There were some individuals who were hale and hearty in spite of syphilis and advancing years. Be that as it may, he states that if about 34 per cent of Negroes and 7 per cent of white persons have syphilis and of that number 17 per cent between 20 and 40 years are not able to do competitive work, and 16 per cent of those past 50 years are not able to work at all, then syphilis is a serious disease from an economic standpoint. Certainly to be considered too is the comparatively rapid drop in the number of the syphilitic from 39 years to 60 years and over. This rapid decrease can only mean that a large number having had syphilis have either died, been treated or are not able to report for examination. No doubt one could select any disease and find a goodly number of persons not only suffering from it but disabled. Physical abnormalities were more frequent in persons with syphilis.

STORAGE AND PURIFICATION OF WATER*

HARRISON WIYGUL, A.B.

JACK C. NORRIS, M.D.

Atlanta

Introduction

"Water is a prime necessity of life, not only as an article of diet but for the proper cleanliness of person, clothing and other things. In centers of population it is essential for manufacturing, the conveyance of waste and for protection against the ravages of fire."

Though water is not classed as a food, it is an essential article of diet. Pure water does not exist in nature. All natural waters come in contact with many surfaces and substances and by virtue of their marked erosion and solvent properties contain impurities; some of which are organic, some inorganic. They consist of various gases, liquids and solids. Water may contain many bacteria and is a frequent medium for the transmission of infection.

Water is considered as either good or bad from a sanitary point of view. For practical purposes it must be classified as either clean, polluted, or contaminated. *Clean* water is free from contamination and safe for human consumption at all times. *Polluted* water contains such substances as taste and odor. *Contaminated* water carries infection of human or animal wastes, or poisonous chemical compounds.

Sources and Storage

The sources of waters are considered under three heads: (1) rain or snow water, (2) surface water, which includes ponds, lakes, streams, and rivers, and (3) ground water, which includes springs and wells.

Rain water is nominally the purest, but its use for drinking purposes has met with much disfavor by sanitarians because it is frequently collected and stored in such manner that it is subject to pollution. The storage of rain water in cisterns and containers about the house was the principal factor in keeping yellow fever alive in endemic form, for the yellow fever mosquito breeds in artificial containers holding water. In the collection and storage of rain water, the first flow should

*From the Department of Public Health and Preventive Medicine, Emory University School of Medicine, Emory University.

be separated from the remaining since it contains the gross impurities. Storage cisterns are best placed underground and when made from wood serve very well; they should be coated with asphaltum paint since rain water attacks iron, lead and zinc. Regardless of how constructed, cisterns are liable to pollution and require frequent inspection and cleansing.

Surface waters vary in their composition, depending upon the character of the catchment basin. Water flowing over uninhabited rocky soil or through deep layers of sand and gravel is freer from organic impurities than water flowing over loam or standing in swamps. Since surface waters are exposed they are frequently dangerous and always open to suspicion. From this source most cities get their water.

Streams are the natural sewers of the regions they drain and when used as a source of water supply, there is established direct connection between the alimentary tracts of the people living upstream with the mouths of those below. The combined use of such rivers as the Mississippi, Missouri, Hudson or Ohio as a sewer and source of water supply of some cities becomes a sanitary problem. At present there is a law against pollution of such water. However, no stream draining an inhabited region can be considered safe without some method of purification, even though the sewage flowing into the stream is treated and all reasonable precautions are taken. There are storm overflows and street-wash that can not pass through sewers and other sources of pollution that can not be controlled.

The composition of river water varies greatly due to the mixture of surface and ground water and to incoming wastes, each contributing a variety of impurities. The mineral content of rivers depends upon the geologic formation and the organic content upon the density of population.

Frequent attempts have been made to correlate the flow of streams and the stages of a river with outbreaks of disease, especially of typhoid fever. These outbreaks are usually independent of the stage of the river. The correlation that appears to exist at high stages is due to the fact that outbreaks are often connected with sudden freshets follow-

ing a dry spell. At such times the flow is rapid, infective material is quickly carried for long distances, and nature's forces have not the time to destroy pathogenic bacteria in water. In other words, it is the rapidity of flow, or the time consumed for the quick transfer of fresh infection rather than the stage of the river, that is most often responsible for water-borne epidemics of typhoid fever. During the spring and fall freshets when the water is cold this danger is greater.

Fresh water lakes and ponds make admirable sources of water supply when kept free from pollution with the wastes of human life. This is much more practicable than in the case of rivers on account of the limited area of the catchment basin of a small lake or pond. In large lakes the dilution of accidental contaminations is enormous and the effects of time, storage, sedimentation and other purifying factors have a good chance to exert their protecting influence.

Impounding reservoirs are artificial ponds, usually made by throwing a dam across a narrow valley. These are usually made along the course of a stream and seem to hold the excess water of the winter and spring flows in store for use in the summer and fall. Time and relative quiescence permit the sedimentation of suspended particles, the coagulation and precipitation of colloidal coloring matter, and the destruction of bacteria. Dangerous intestinal bacteria die during the time the water is stored, and also there is the primary protection because such reservoirs are usually located in sparsely settled districts where sanitary conditions or the catchment areas are better controlled. The chief disadvantages are heavy growths of large Algae and other micro-organisms responsible for objectionable tastes and odors.

The stagnation of water in these reservoirs is of importance. The upper part of the water is usually in circulation under the influence of the wind while the lower part remains stagnant. There is no mixing between the surface and bottom water except for two short periods each year, in the spring and fall, known as the overturn. At this time by mixing of the top and bottom layers of the water equalizing of the temperature throughout the layer produces vertical currents. The organic matter upon the bottom of the reser-

voirs decomposes and, in the absence of oxygen, produces vile odors and tastes. These tastes and odors may be greatly reduced in their intensity by this natural mixing process or effectual aeration of the water through a system of nozzles.

Ground water is obtained from wells or springs and is usually more satisfactory than surface water containing more injurious impurities. Surface water is purified as it percolates through fine sandy soil. This is nature's process of filtration; the organic matter is oxidized and the bacteria are strained out. The soil can take a large amount of pollution and if not overburdened, or if it has no cracks or crevices, the ground water may be entirely free of objectionable organic substances or bacteria. In passing through the soil water takes up a large amount of carbon dioxide, which is set free by organic decomposition, thus giving it greater solvent action for lime and other inorganic constituents so that it is apt to be harder than surface water. In deeper waters the solvent action is favored by increased contact with geologic formation so that deep wells and artesian wells are frequently unfit for domestic use on account of the large amount of lime, iron, salt and other inorganic impurities which they contain.

The water that soaks into the soil finally rests upon an impervious stratum occupying the spaces between the sandy particles. Ground water is found in sandy gravel and limestone formations. Ground water finally reaches a certain stratum where it ceases to pass downward, being directed in a horizontal plane and forming a more or less continuous bed of water in the porous stratum known as the ground water table. To the ground water table wells are sunk, and from it springs and lakes crop out on the surface.

Water flows through sand with some difficulty due to friction on the sand particles. Thus, to secure a large quantity of water from such formations, it is necessary to have a number of small pumping stations situated so as not to draw from unwholesome impurities.

The collection, storage and flow of water from sandstone rock is precisely the same as that from sand and gravel and it is always well filtered.

In limestone rock the flow of water is not

through porous rock but through fissures or passages. These crevices are sometimes very large due to the gradual solution and removal of the limestone by the passing water. These crevices are often continuous for many miles and the direction of flow of the water bears no relation to the surface drainage. Pollution at one point may endanger those using the water at a far distant point. Limestone formation has little ability to hold abundant winter flows and to maintain a supply through droughts. Thus, the supply is subject to fluctuations and may fall short when needed. From a sanitary point of view, water flowing through sand is filtered and purified, whereas no such action takes place through limestone fissures. Typhoid fever has been caused rather frequently by the use of ground water from limestone formations and water supplies from this source must be regarded with suspicion.

A well is a hole sunk into the earth to reach a supply of water. Wells may be shallow or deep, dug, drilled or driven. A well may be polluted from the surface and from subsoil drainage under certain conditions. The filtering powers of the soil is usually sufficient to protect the water drawn from a well unless, (1) the soil is overburdened with organic matter; (2) a cesspool, broken sewer, or other gross source of pollution close by; or (3) channels, fissures, or crevices exist in the subsoil so that impurities reach the well without undergoing the process of filtration through the soil.

The location of a well should, therefore, depend upon the surface configuration of the ground, the character of the soil and the proximity of possible sources of pollution. The outer space between the casing and the earth should be filled in with well tamped clay or concrete. The casing should always extend 18-20 inches above the surface of the ground and a sheet of concrete built around it in a circle 3-4 feet wide. The floor of the well should rest upon the top of the casing, so that no space is left for frogs, mice or bugs to crawl in, and should be water tight. The top of driven wells should be carefully protected as otherwise polluted surface water may seep down the sides of the pipe. The ground above all wells should slope away and be kept clean and, where possible, turfed.

The waste water should be carried by pipes to a considerable distance from the well.

Artesian water and deep wells furnish the softest and one of the most satisfactory sources of supply, but these waters, as stated, sometimes contain inorganic impurities rendering them unfit for domestic purposes. Shallow wells have been eliminated from all cities due to the polluted condition of the soil from broken or leaky sewers and other sources. In rural communities shallow wells located in sandy or gravel formations are entirely satisfactory provided there is no nearby source of pollution.

Spring water as a rule is of a high degree of purity and as the water flows spontaneously it can easily be utilized; and it is less subject to contamination from lowering of the water table than is well water. Springs may be contaminated from various sources in much the same way as wells. The overlying porous layers of soil may be too thin to remove the contamination of surface washings from privies, stables, hog pens and other places. For protection, these sources of pollution should be as distant as possible on another slope. Soil pollution must be prevented in the neighborhood of the spring, and animals kept away.

Purification

There are a number of procedures available for the purification of water on a practical scale. No method or combination of methods of purifying water can be considered a satisfactory hygienic standard that does not first eliminate water-borne diseases. The treatment employed must remove all but a few of the bacteria and it must be accomplished at a reasonable cost. If the water is to possess esthetic appeal, any process used must also reduce turbidity, color, odors and tastes.

Nature has various methods of purifying water which are: (1) evaporation and condensation, which makes rain water the purest of natural water; (2) storage in lakes and ponds, and (3) the physical, chemical, and biologic action of the soil upon water that filters through into the earth.

That streams become purer during their course of flow is definitely known; however the process may not be complete and final. The best example of this is the Mis-

issippi River, for after draining one-third to one-half of the United States in a flow over 2,500 miles, it is exceptionally free of intestinal bacteria at New Orleans if judged by the comparative absence of the colon bacillus. The forces that are used in this self-purification are varied and interesting (1) Physical—the most important of which are aeration, light and gravity.

The *aeration* operates by contact of the water with the atmosphere. The oxygen being absorbed from air and the gases of decomposition, such as carbon dioxide, are liberated from the water. *Light* stimulates the process of photosynthesis in aquatic plant life, resulting in oxygen being added to the water and carbon dioxide removed as foods. *Gravity* causes sedimentation of suspended impurities and of colloidal and light suspended particles that have formed aggregated masses. The particles which are constantly coagulating and settling, wash the water by emeshing the bacteria, which are carried to the bottom. This acts as a filtering process. (2) Chemical—which includes oxidation and reduction. This reduces the organic matter by liquefaction and gassing. (3) Biologic—which promotes purification by the food habits of various micro-organisms.

Boiling renders waters safe as far as water-borne diseases are concerned but does not do away with chemical impurities. However, this is the only way for the traveler, the camper, and others who must use water from various sources, the character of which can not be readily ascertained.

Some type of filter is used by practically every public water system today. There are two main types: (1) Slow sand filters and (2) rapid sand filters.

Slow sand filters are beds of sand through which the water percolates. They consist of large, shallow, tight reservoirs suitably underdrained and containing some 4-5 feet of stratified material of progressive degrees of fineness, beginning at the bottom with some broken stones or gravel and ending with an upper layer of fine sand. The water is passed slowly through from above downward. Cleansing of the filter is accomplished by removing the surface layer of dirty sand. The water thus purified is cleaned biologically, physically and chemically.

Rapid sand filters include the addition of a chemical precipitate or coagulant to the water followed by sedimentation, passing the water rapidly through a layer of sand and washing the sand when dirty by reversing the flow of water.

The coagulants used are aluminum sulphate and aluminum hydroxide which clears the water by emeshing and depositing the sedimentation basin and on the surface of the sand.

Rapid sand filtration meets with special favor in some parts of the country because it affords a cheap method of supplying clean water from very muddy streams. These filters when properly designed and operated will take out most of the bacteria contained in raw water.

The storage of water is one of the simplest and best means of purifying it. Harmful bacteria soon die, the solid particles settle out, the organic matter is largely oxidized, the color is gradually bleached and other improvements take place. Prolonged storage of water prior to artificial treatment possesses great merit as a measure for improving the physical and bacterial quality of highly polluted water.

There are various chemicals used in the artificial treatment of water. The main ones are chlorine, aluminum sulphate, ferrous sulphate, copper sulphate, and activated carbon. Hardness is removed by means of lime and soda ash.

The chlorination of water removes the bacteria, but it does not clarify the water, destroy organic matter, nor remove unpleasant smells which raw water often contains.

The aluminum sulphate and ferrous sulphate are used as coagulants and have already been described.

Copper sulphate changes the biologic balance of the microscopic growth in water, which may or may not be favorable depending upon conditions.

Activated carbon or ordinary charcoal is used for the removal and prevention of disagreeable odors and tastes.

COMPARATIVE DRUG PROPHELY- LAXIS SURVEY OF MALARIA

Preliminary Report

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Sir William Osler once said: "Humanity has but three great enemies: fever, famine and war; of these the greatest, by far the most terrible, is fever . . . As far back as history will carry us, in ancient Greece, in ancient Rome, throughout the Middle Ages, down to our own day, the noisome pestilence, in whatever form it assumes, has been dreaded justly as the greatest of evils." The practitioner in the temperate and tropical zones needs no reminder of this fact; however, his intimate association with the various fevers has caused him to assume an attitude of more or less laxity toward them. Especially is this true of malaria, which often occurs in a benign form, thus minimizing its importance. However, one needs no further facts for the conviction that malaria is one of the most serious of all Southern diseases, than a review of the collected statistics of the U. S. Public Health Service, which show that in 1934, 4,500 persons died from malaria alone, and the rate of morbidity for that year was probably in excess of 5,000,000 cases. A consideration of this information, together with the knowledge of the serious symptoms that this malady is capable of precipitating, render the attitude of most practitioners little short of culpable. As has been pointed out by numerous authorities in tropical medicine, notably, Col. S. P. James, the whole subject of malariology is one of tremendous complexity. The treatment of malaria, which in the eyes of many physicians is nothing more than a trivial routine, involves a great number of pertinent considerations. Malaria is a parasitic infection and should be treated as such, with due respect for the many varied conditions which occur. A thorough study of the parasite is essential, therefore the different species of parasites, the determination of the specific geographic strain of the species, the phase of the life cycle of the plasmodia and the toxic tolerance of the parasite itself, all demand at-

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tention. The clinical stage of the disease is also of importance; i. e., fresh infection, treated, or untreated relapse. The virulence of the parasite, which may vary according to the locality, and the compatibility of the host to withstand infection, are factors worthy of consideration.

With the great number of variables present, each case, as well as each locality, presents different problems. Descriptions of the plasmodia are as numerous as they are fallible. Inadequate knowledge concerning the morphology and physiology of the parasite is evident on every hand. Why this phase of the subject has not been given as much consideration as the entomologic studies is a matter of speculation, but adds little to the solution of the intricate problems. The plan of attack of a parasitic disease assumes a general form of simplicity. First, exhaustive studies of the infecting organism are of paramount importance. This is accomplished only in the biologic laboratory by methods employed in the study of any other protozoa. Secondly, specific toxins for the organism must be discovered and their merit proved by long use as therapeutic agents. One need not search long in the literature before he is confronted with a bewildering mass of material on both phases. The first portion of the problem offers little chance of misrepresentation other than academic controversy. In the latter part, however, one is confronted with so much confusing information that the task takes on an aspect of hopelessness. The only surveys which could possibly be reliable are those which employ all types of anti-malarials in the same area. This is evident by the great variety of conditions in different localities. For the most part, the surveys which clutter the literature resemble testimonials more than scientific therapeutic experiments. It is a well-established fact that no known remedy has an invaluable action on malarial parasites; the manifold problems create a serious doubt that such a remedy will ever be found. On the other hand, it is equally evident that certain drugs are specific for certain types of malarial infections. Here again the problem of the plasmodia assumes a prominent place; while it may be true that a certain form of therapy may be specific for every kind of parasite, the conclusion cannot be justly drawn that the

therapeutic agent is specific for each form of the parasites, i. e., sexual, asexual, or sporozoite.

In malaria another perplexing problem is the transmission of the plasmodia from one of its hosts to another. The fact that two hosts are involved, the human host and the anopheles mosquito, naturally opens up two problems in the possible eradication of the disease; namely, the destruction of the mosquito and the destruction of the plasmodia in man. A third possibility may also be named, but the futility of such a measure is obvious; i. e., the protection of man from the bite of the mosquito. The only hope of accomplishing the end by the first method is the complete destruction of the breeding place of the mosquito. Anyone familiar to any extent with the topography of the coastal plain regions will recognize the absurdity of such measures. Ponds, ditches and sinks are very prevalent throughout these regions, and the consistent erosive action will keep well ahead of any effort to fill or drain the lime sinks which are being constantly formed. There is no doubt that in some areas where a large number of inhabitants are in close proximity to a large body of stagnant water, drainage will bring a notable reduction in the malarial rate. Even in these instances the justification of such projects is questionable. In the first place the drainage projects require a great deal of maintenance; second, in few instances is the population large enough to justify the cost of such an outlay; third, the economic status of the people and land may not compensate for the cost. At best these programs benefit a relatively small number of people. One needs only to drive through the lowlands of South Georgia to comprehend the immensity and futility of such measures.

In consideration of the second possibility, it is obvious that if the human host be ridded of the parasite there would be no means of infecting the mosquito. With the intervention of winter in the temperate zones this could be accomplished if there were toxins specific for all types of malarial parasites. Before such experiments could be attempted with any degree of validity, an accurate knowledge of the physiology and, if one may allude to such, the metabolism of the parasite is essential. In making such a study the em-

ployment of the standard anti-malarials would certainly not be confusing, and would add appreciably to the existing information on this phase of the subject. The problems connected with surveys to determine the relative value of drugs are varied and complex. Possibly the greatest evil from them is the misinterpretation of results, together with the often too hasty deductions that are made. To determine the true value of an anti-malarial drug, or the comparative value of drugs, it is necessary to extend the survey over a long enough period of time to include at least one of the cyclic upswings in the malaria rate. The absolute cooperation of the individuals concerned is also highly important.

In undertaking a program of this type it was necessary to secure a group of people large enough to justify deductions as to the effectiveness of the various therapeutic agents used. If an accurate comparison as to the prophylactic value was desired there would necessarily have to be a control group large enough to determine the prevailing incidence of malaria for that locality for the season. This control group would also furnish adequate material for parasitologic study.

At this point it is well to state that there is a consciousness of the voluminous material on all of these subjects. However, there is little information obtainable on the comparative surveys with reference to determining the specific action of drugs to all kinds and forms of parasites. This information is obtainable only after an extensive project has been carried over a long period of time. It is the purpose of this preliminary report to give only advance information relative to the results obtained with the two prevalent prophylactic treatments. For the initiation of the proposed program it was decided to select a relatively small group so that a workable system could be developed that would adequately accommodate a group of at least 1,000 persons to make for more accurate results. The final selection was a group of 337 persons permanently located on a 16,000 acre plantation. The conditions were ideal for malaria infection; much of the area was swamp land, none of the dwellings was screened and all of the houses were widely scattered.

At the beginning of the project, which was

the first week in May, thick blood smears were made on the entire group, to determine the number of carriers and infections. The smears were examined by the Georgia State Board of Health and showed 11.572 per cent of the entire group positive. At the same time a careful history of chills and fever for the previous year was taken. The group was questioned carefully as to the medication used, which showed a large percentage of "666" and other patented chill tonics. It had been our experience that the use of various anti-malarial compounds was instrumental in causing "quinine fast" cases, which phenomenon is explained by the fact that the infecting organism is able to create an immunity to the toxic effect of the basic anti-malarial drug, usually quinine. In the patented compounds the quinine content is so low that the abortive effect is lost, and the development of the parasite is merely inhibited. Continuous use of such medication increases the immunity of the parasite and, when the parasites reach sufficient numbers, a relapse occurs which may not be effected by massive doses of quinine.

All the positive cases in the group were treated, half with the recognized short-method treatment of quinine and half with atabrine. The remaining individuals were divided into three groups: atabrine, quinine, and control. Each person in the atabrine group was given one tablet ($1\frac{1}{2}$ gr.) of atabrine three times weekly as prophylaxis; in the quinine group each person was given 10 grains of quinine daily. The medication given to children was proportional, considering body weight. Of the positives, after they were treated, approximately one-half were placed in the quinine group and approximately one-half were assigned to the atabrine group. To eliminate psychologic factors the control group was given bicarbonate of soda capsules in the same manner that the quinine group received quinine. To maintain close contact with the different groups, each patient was visited at least once each week. Drugs were issued at that time and on the appearance of any malarial symptoms, both thick and thin blood smears were made and all medication discontinued, except aspirin to control the fever, until the parasite was demonstrated. If the parasites were demonstrated, and only

if this could be done, the patient was treated, using the drug of his or her group. In the control group, half of the new infections were treated with atabrine and half with quinine. With the manifestation of any toxic symptoms from the drugs, the prophylaxis was suspended for one week. If at that time the symptoms were alleviated the prophylaxis treatment was resumed. If they recurred, the other drug was substituted.

TABULATED RESULTS OF THE SURVEY
BY GROUPS

Group	Atabrine	Quinine	Control
Number of patients in group	109	108	120
Per cent in group positive at beginning of survey	16.513%	13.888%	5.0%
Per cent of new infections	1.834%	5.555%	31.666%
Of these:			
Treated with atabrine	100%	50.0%	44.736%
Treated with quinine	0%	50.0%	55.263%
Relapse after treatment:			
With atabrine	0%	0%	—
With quinine	—	66.666%	—
Reinfections after treatment:			
With atabrine	—	—	14.764%
With quinine	—	—	57.285%
Toxic reactions	0%	5.555%	—

In a group of 337 persons selected for the comparative survey, conducted during the summer of 1936, 57.985 per cent gave a history of malarial infection for the previous year (1935). This figure presents a striking contrast to the lowered malarial incidence for the duration of the survey, as indicated by the 31.666 per cent infection in the control group. However, this is in keeping with the lowered malarial incidence in other sections, probably accounted for by the frequent rains during the mosquito breeding season. New infections, i.e., infections other than relapses from previous positive cases and reinfections after treatment, were 5.555 per cent in the quinine group as compared with 1.834 in the atabrine group. Of the new infections in the quinine group, half were treated with quinine and half with atabrine. This was done as it was considered that atabrine was indicated in those patients who gave a history of having taken patented anti-malarials the previous year, thus creating the possibility of "quinine fast" cases. The patients who received atabrine were then given atabrine as prophylaxis. In the control group there were

57.285 per cent reinfections after treatment, using the recognized short method of quinine, while there were only 14.764 per cent reinfections following the use of atabrine. It is noteworthy that the reinfections after atabrine occurred four weeks or longer after treatment was completed, while the reinfection following the use of quinine occurred at any time after ten days. This is accounted for by the fact that atabrine is excreted more slowly and remains in the body for a longer period than does quinine. There were 66.666 per cent relapses in the quinine group after receiving quinine treatment, and then continuing on quinine as a prophylaxis; there were no relapses with atabrine. The high incidence of relapse in the patients treated with quinine may be accounted for on the basis of "quinine fast" cases and the chemical action of the drug. There is also noted that 5.555 per cent of the patients receiving quinine showed a toxic idiosyncrasy for the drug; in these cases atabrine was substituted. There were no idiosyncrasies to atabrine.

Conclusions

1. As prophylaxis, atabrine is superior to quinine in preventing new infections.
2. After treatment with atabrine, during follow-up prophylaxis treatment, there were no relapses; while following the same procedure, using quinine, there were relapses in well over half of the cases.
3. Atabrine remains in the circulation longer than quinine, thus withholding reinfections for a longer period.
4. In treating new infections, atabrine is superior in that administration is simple, fever is aborted quicker, and the course of treatment is shorter.
5. There were no toxic manifestations following the use of atabrine alone.

The St. Louis Medical Society celebrated its one-hundredth anniversary, April 5-7. The program consisted of: *Reenactment of the First Meeting* (Portrayed by the Original Minutes); ADDRESSES: *History of the St. Louis Medical Society; Aims and Accomplishments of Medical Societies and Ours* (St. Louis Med. Soc.) in Particular; *Medical Progress in the Last One Hundred Years; Our Library*. PLAY: *Mushrooms Coming Up*. ADDRESSES: *The Art of Medicine; The Great Physician; The Doctor and the State*.

FOREIGN BODIES IN URINARY BLADDER*

Report of Case

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Foreign bodies in the urinary bladder vary in composition, size and contour and are of two classes: those of external origin, that is, those which have been introduced through the urethra or have penetrated through the bladder wall from adjacent structures; and those of internal origin, namely, those which have formed within the bladder or kidney by deposits of urinary salts.

Some theories advanced to explain the cause of stones in the bladder are: that all calculi must have a foreign body as the nucleus to precipitate the salt crystallization, or that some change in the chemical construction of the urine precipitates the crystals. Any foreign body in the urinary bladder will, in due course of time, act as a nucleus and stimulus for the formation of calculi by salt deposits. All theories have not been proved but it is known that some of the large stones removed from bladders showed some foreign body as the precipitating cause.

Case reports list the following articles found in the urinary bladders of patients: old and rotten catheters, filiform bougies, hairpins, pencils, penholders, beads, sticks of sealing wax, chewing gum, bullets, straws, feathers, thermometers, glass rods, pipe stems, crochet needles, orange wood stick, a three penny piece and many other objects. Parts of old catheters, bougies and instruments have been left in the bladder following treatment by a doctor, or by the patient. Parts of old catheters are found more frequently in male patients who have no knowledge of how they reached the bladder.

Studies of the source of foreign bodies in the bladder should, in most cases, come under the psychiatrist rather than the urologist. Except in the few cases where catheters and bougies are broken off during medication, the purposes of their introduction are to produce abortion or for sexual gratification. Men are

more likely to indulge in this form of sexual perversion than are women, but foreign bodies introduced in this way are found more frequently in women, probably because of the shorter urethra in the female and the greater readiness with which an object can pass into their bladders. Foreign objects that are lost in the bladder during sexual perversion will remain longer in the bladders of females than in males, because of the reluctance on the part of women to tell the physician the cause of the disorder.

There are cases where foreign bodies have gained access to the bladder by other routes. Metals or other pointed objects have been swallowed and made their way through the bladder wall. In 1884 a case was reported in England of a sailor who swallowed a whale-bone mouthpiece of a tobacco-pipe; three years later it was removed from his bladder. A similar case, a young woman, was found to have a hair-pin in her bladder 27 months after she had swallowed it accidentally. A piece of slate pencil two and one-quarter inches long was removed from the bladder of another patient.

The symptoms of foreign body in the bladder will vary with the size and location of the object. In all patients in whom the foreign body was introduced through the urethra the symptoms were identical. A cystitis usually follows the introduction, with frequent and difficult micturition, occasional stoppage of the stream and, in many cases, hematuria. The symptoms will become more or less intermittent when the foreign body has been in the bladder for some time. Frequently patients, especially women, will present themselves to the physician with a history suggesting delay in seeking medical attention, with serious bladder disturbance; such cases should be suspected of having a self-introduced foreign body. The diagnosis is best made from the history and physical findings. The urine usually shows the presence of pus and blood with quantities of crystals of the predominating salt. The x-ray will show the calculi and in some instances other foreign bodies that are present. A cystoscopic examination is of great value in these cases.

Treatment of the patients varies according to the size and position of the foreign body.

*Read before the Seventh District Medical Society, Marietta, September 30, 1936.

A small stone or elongated foreign body, such as a hair-pin, can be extracted through a cystoscope, or lithotrite. Some physicians consider litholapaxy the safest and best operation for all cases of foreign body in the bladder. Many surgeons prefer the suprapubic cystotomy because it can be used in all patients—young, old, large or small—while lithotrite can be applied to the patient whose urethra is passable or can be safely made passable to satisfactory instruments. The type of operation will depend upon the judgment of the physician handling the case. The following case, which was unusual in my experience, is reported:

Report of Case

A married white female, aged 23, was first seen May 13, 1936, complaining of severe, constant pain in the lower abdomen, and urinary incontinence. Her pain was first noticed about Jan. 5, 1936, when the patient began having mild abdominal pain, and frequent and painful urination. Patient was in bed for a few days during which time she thought she had some fever. About Feb. 10, she began having dribbling of urine, which became worse and almost constant. She had noticed a small mass in the left lower region of her abdomen since March. Has lost weight and is weak. Since April she has been passing many small stones in her urine. Past history is negative. Delivered full-term dead fetus June, 1935. Menses regular since pregnancy.

Physical Examination: T. 99.3, P. 88, R. 24, well developed, poorly nourished adult white female. Chest was clear. Heart normal. Abdomen flat with slight rigidity of left rectus muscle. Easily palpable small, firm, nodular mass was found in lower abdomen just above the symphysis and extending a little to the left; it is tender and fixed. Pelvic examination revealed normal cervix and uterus; marked pelvic tenderness. Firm nodular mass about the size of hen's egg was felt in the region of the urinary bladder, was fixed and patient complained of pain on pressure. The urethra was dilated sufficient to admit the examining finger, revealing a firm, nodular mass and many small calculi in the bladder. The diagnosis made was stone in the bladder and cystotomy was advised. Under ether anesthesia a suprapubic cystotomy was performed, the peritoneum being left intact. The bladder wall was thick and friable. When the bladder was opened a foul odor was noticed. The mass was removed with difficulty and as many of the small stones as possible were washed out with mercarbolic solution. The bladder was closed with interrupted chromic catgut sutures. A rubber tissue drain was placed in the space of Retzius and the skin was closed with silk and silkworm gut.

The mass removed was a piece of rubber tubing 56 cm. long and 1 cm. in diameter; it was covered with calculeous deposits to form a solid mass.

Following the operation the patient had fever of 103° F. on the second day. She became free of fever and went home on the fourth postoperative day. There

was free drainage of urine from the wound. The sutures were removed on the sixth day and the patient was out of bed on the ninth day. The wound healed rapidly and she was dismissed on the twentieth postoperative day.

Following the operation I questioned the patient regarding the tubing but she denied any knowledge of it. Finally she told me that her husband and his mother had put the tube in her bladder about Jan. 5, 1936. They had threatened to kill her and she presumed it was put there for that purpose. She denied any history of pregnancy or having had an abortion, but being of the moron type I have wondered as to the value of this history. She had refused to tell me or anybody about the tubing for fear her husband would kill her.

Conclusions

Foreign bodies in the urinary bladder are found frequently and are varied in type.

Many foreign bodies get into the bladder accidentally during sexual perversion and cannot be removed by the patient.

Patients will delay to seek medical attention for a self-introduced foreign body in the bladder.

Suprapubic cystotomy should be the operation of choice in removing foreign bodies from the urinary bladder.

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SIGNIFICANCE OF GONOCOCCUS COMPLEMENT FIXATION TEST AS DIAGNOSTIC AID IN STUDY OF ARTHRITIS

Charles F. Warren, Brooklyn; William A. Hinton and Walter Bauer, Boston (*Journal A. M. A.*, April 10, 1937), point out that the results in 614 gonococcus complement fixation tests on the serums obtained from 316 patients with various types of arthritis indicate that the test is an important diagnostic aid in routine study of arthritis patients because: 1. Of 125 tests done on the serums from the seventy-four cases of proved or probable gonorrheal arthritis, 81.6 per cent gave positive reactions at some time during the course of the arthritis. 2. Of the tests done on the serums from the fifty-two proved cases of gonorrheal arthritis, 80.7 per cent gave positive reactions at all times. 3. Only 18.4 per cent of all the tests made in the seventy-four proved and probable cases of gonorrheal arthritis were negative. 4. Of 239 cases representing other types of arthritis, 91.6 per cent gave consistently negative reactions. 5. A positive reaction obtained in a case in which the history is not consistent with a diagnosis of gonorrheal arthritis is not significant. In cases in which the history is consistent with a diagnosis of gonorrheal arthritis, a positive test will be correct in 90 per cent of the cases. In about 20 per cent of the cases the reaction will be negative. If the imperfection of the method can be improved, it may approach the Wassermann test in accuracy.

BILIARY DISEASES IN THE NEGRO*

FRANK KELLS BOLAND, JR., M.D.

Atlanta

It is frequently called to our attention that the incidence and nature of certain diseases differ in the white and colored races. Since the patients of the Emory University division of Grady Hospital are negroes I have had an opportunity to study the diseases of this race. I wish to present a discussion of biliary disease in the Southern Negro.

Incidence

The most interesting point to be stressed is that of low incidence. This statement depends on the following facts:

First. During the ten year period, 1925-1935, there were about 65,000 patients, including 15,000 obstetric, admitted to the colored division of the hospital. Only 88 were diagnosed as having disease of the biliary tract. During the same period among 75,000 patients, including 14,000 obstetric, who entered the white division, there were 755 cases of biliary tract diseases. Thus we find that in a Southern city of 300,000 population, one-third of whom are negroes, the incidence of biliary disease among whites was ten times as great as among negroes.

Second. During this same period 4,435 laparotomies were performed on the colored side of the hospital and only 44 were performed upon the gallbladder and its ducts.

The records of the hospital prior to ten years ago were not obtained, but Boland¹ in a recent paper states that although the incidence of gallbladder disease is still low among the colored, that 25 years ago the disease was unheard of in this race.

Two points come to our mind: What is the reason for the low incidence among this race and why do we find more cases with biliary disease than formerly? Idleness and lack of exercise, together with habitual eating and drinking too much, are all factors in the occurrence of these diseases. Negroes are accustomed to hard work and rarely do they suffer from overeating or lack of exercise.

McCarrison² in an article on *Faulty Foods in Relation to Gastro-intestinal Disorder*

tells of his surgical experience in a remote part of the Himalayas. There he worked with several isolated races far removed from the refinements of civilization. During nine years of surgical practice, and performing 400 major operations annually, he did not see a single case of peptic ulcer, appendicitis or gallbladder disease. He believes that the character of their food is largely responsible for the absence of such diseases among tribes who live on simple foods, such as milk, eggs, fresh fruits, vegetables, little meat and sugar. Their foods are produced close to the communities where they are consumed so that it is not necessary to prepare them for transportation and preservation. Our food is polished, sterilized, canned, frozen and otherwise treated until it is entirely changed. McCarrison had further opportunity to prove his point when he observed a group of natives forced to move to a more civilized part of the country where they could not obtain their former foods. Immediately some of them developed sicknesses which did not affect them while they were on their accustomed diet.

And so it is with colored patients. They enjoy fresh green vegetables, "pot-likker," cow peas and other articles familiar to all Southerners. Fancy foods and meats are usually excluded from their diet because of the cost. As the negroes are becoming more like whites they are deserting their natural foods and the frequency of biliary and gastrointestinal troubles are rising.

Of the 88 cases of biliary tract disease found among the records only 51 were proved by operation, x-ray or autopsy to be cases of biliary disease. This study is confined to the 51 patients although probably most of the others were also affected.

Age. The youngest patient was 24 and the oldest 70. One-third were under 40. Most of them were between 40 and 50. This age period is similar to that seen in the whites.

Sex. There were seven females affected for every male. Most series on white patients do not show such a discrepancy between the sexes.

Weight. Of the 51 patients, 20 were obese, six were poorly developed and the remaining 25 were well developed and well nourished.

Syphilis. Twenty-five per cent of the gen-

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eral admissions to the negro unit have positive Wassermanns. Twenty per cent of the patients of this series were affected. The high incidence of syphilis among the Negro is a point used in explaining the behavior of certain diseases among these people. From this study we were unable to find any relationship between cholecystitis and syphilis, although one patient had a co-existing chronic inflammation of the gallbladder and syphilis of the liver.

History of Typhoid Fever. Seven of the patients had had typhoid fever from 5 to 15 years before their admission for biliary disease. A previous attack of typhoid has been mentioned as the beginning of some cases of gallbladder diseases. There were no records showing that typhoid bacilli had been obtained from cultures taken from the gallbladder.

Pathology. The type of pathologic change found varies in the negro as it does among the white patients.

Acute Cholecystitis. Only six were proved cases of this disease. Of 37 cases not included because of insufficient evidence, 20 were diagnosed and treated as acute cholecystitis. Since the patient usually recovered in a few days no further study was made unless he returned to the clinic. As a rule these people are not interested so much in their future and so are not seen again unless further trouble develops.

Regardless of the predisposing causes already mentioned, infection is the exciting cause. There are a number of ways in which infection may reach the bile passages: through the blood stream, which is the most probable; ascension through the duodenum, by the bile from the liver, and through the lymphatics of the intestines and liver.

Usually there is seen a reddening and congestion of the mucous membrane with an increased production of mucous. With more virulent infection there is sufficient increase in the cellular elements to produce an empyema, our patients were relieved before gangrene and rupture occurred. Involvement of the peritoneal covering leads to pericholecystitis and subsequent adhesions. Frequently the pathologic changes do not undergo resolution and chronic inflammation of the gallbladder results.

Chronic Cholecystitis. There were 44 pa-

tients with this type of disease. Twenty-four had stones and twenty did not. It is usually stated that between 60 and 70 per cent of the patients with chronic cholecystitis have stones. In our series 55 per cent of those with chronic cholecystitis had cholelithiasis. Why gallstones form in some gallbladders and do not in others is not known. Chronic infection and stasis will not explain all stones. The latest theory is that there is a faulty metabolism of some of the salts. Just exactly what chemicals are to blame is still a mystery, but from this study I believe the solution will be found in the complex structure of some of our foods.

Most of the chronically inflamed gallbladders that were removed showed adhesions and thickened grey walls. In most instances the gallbladder was enlarged, but in 12 patients there was a definite shrinking of the gallbladder. There were eight patients who had a "strawberry" gallbladder. Six of these had stones.

Carcinoma. There was only one case of cancer of the gallbladder. Cholelithiasis also existed in this patient. Most writers consider carcinoma of the bile tract to be a complication of gallstones since cancer is rarely found unless stones are present. The incidence of carcinoma with cholelithiasis has been quoted as high as 8 per cent among white patients.

Signs and Symptoms. The signs and symptoms of biliary disease observed in the Negro are about the same as those seen in white people. The complaint that brought most of them to the hospital was epigastric pain. Most white people also wait for pain before consulting a physician. Many of the patients had had vague digestive complaints for some time before coming to the hospital. Nausea and vomiting were common symptoms. In only five records was there a note of pain radiating to the shoulder. The acute cases all had fever, leukocytosis and exquisite tenderness over the gallbladder. Jaundice was a fairly common symptom and was found in ten patients. There was some tenderness over the gallbladder in all cases. A definite tumor was palpable in those with empyema.

Roentgen-Ray Examination. Roentgenography is the most valuable addition to our armamentarium for making a diagnosis on

patients with biliary disease. Unless the patient has a definite gallbladder history the gastro-intestinal tract is examined in series. About one-fourth of these patients had such vague complaints that this was the first procedure. If a diagnosis is not made by this means he is given the Graham test. Usually the dye is given by mouth, but if the gallbladder does not fill or the dye is not retained, the test is repeated by giving the dye intravenously. No ill effects were noted following the intravenous administration of the dye. Nine of the patients included in this series showed gallstones on a flat plate and this, with the clinical evidence was enough to justify a diagnosis of gallbladder disease without further study. Seven had no roentgenograms and a positive diagnosis was made in five of these at operation and in two at autopsy. Thirty-five were given the dye and all showed evidence of biliary disease which was verified at operation.

Of the twenty-four patients who showed stones at operation six were not revealed by roentgenograms. It is usually stated that about one-half of all gallstones may be visualized but 75 per cent of the calculi found in this series were discovered by roentgen examination.

Treatment. The acute cases were treated expectantly with opiates, local applications, low fat diet and lavage. This form of treatment was also used on all other patients with gallbladder disease who either refused operation or were not considered good risks. There were 21 treated in this manner with three deaths. However, there were no complete cures in this group. Operation on acute biliary disease is not advocated in this hospital. In seven a cholecystostomy was performed. This procedure was employed on those with empyema of the gallbladder and on those whom it was not thought could stand more radical surgery. One of the patients died. The remaining 22 received the operation of choice, namely, cholecystectomy. Three of these died, of whom two had common duct stone. In the four patients who had common duct stone the gallbladder was removed and the common duct drained. In all cases of cholecystectomy a drain was placed to the gallbladder fossa.

Eight of the 44 operative cases had spinal

anesthesia. The others had some form of inhalation anesthetic, usually ether by the drop method.

Conclusions

Biliary disease is still not common among the negroes, but more cases are being reported than formerly. The reasons for the low incidence found among these people are: they eat a simple diet and lead a life of manual labor. As they tend to forsake their original diet and mode of living they acquire diseases found in individuals leading more complicated lives.

Once developed, gallbladder disease in the Negro follows a course similar to that found in other races.

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AMENDED COMPENSATION ACT

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Since the Workmen's Compensation Law became operative in March, 1921, it has been recognized that certain amendments were desirable if the Act was to effectively serve the purposes for which it was created. The medical provision of the old law, as you know, was limited to \$100.00 for physician's services, hospital, drug and nursing care for a period of thirty days only following the injury. Treatment beyond this period and in excess of \$100.00 was optional with the employer, but could not be required by the terms of the Act.

Although experience with the administration of the old law had shown beyond question that some ninety per cent or more of the cases requiring treatment could be properly cared for under the \$100.00 limit fixed in the original Act the Industrial Board has long been convinced that the law should be amended by providing a liberalized medical section to take care of the more serious injuries.

Because of this weakness in the old law and some others not pertinent to this discussion the Industrial Board, out of a sense of

duty toward injured workmen and the medical profession, has from time to time, over several years, sought to secure an amendment, which would eliminate this and other inequities.

Opposition to increased medical costs has always arisen out of fear that such an amendment would probably very materially increase costs of insurance. The Board has had to contend with the fact that these fears were not groundless because the cost of medical care in Georgia although limited has been higher than similar costs in states where more liberal medical provisions have applied. The only explanation for this curious experience is that charges by physicians and hospitals have been more than the economic status of the group treated would justify. Practically all workers covered by the Act are low-income employees. The average wage of injured workmen in Georgia is not more than \$15.00 per week. This economic group, prior to the enactment of the Georgia Workmen's Compensation Act, could not and did not pay but very little for medical care. When these facts are borne in mind and it is remembered that Workmen's Compensation Laws are designed to distribute the burden of lost wages, because of injury, over the consumers of the products of industry, it becomes apparent that we are dealing with a form of social legislation, which imposes an obligation upon the profession to view its services to injured workmen, in part at least, in the light of a public service. All groups, concerned, the employer, the employee, the consumer—make contributions in order that the liberal spirit and purpose of this legislation may be made applicable. Our profession would be the last group to withhold its full cooperation.

In spite of failure upon the part of some doctors to comprehend the purposes of compensation law, which, no doubt, has led to over-charging and unnecessary treatment, particularly of the simple injuries and notwithstanding a persistent opposition because of fear of sharply increased insurance rates, the recent session of the Legislature enacted an amendment providing for \$500.00 medical and a treatment period of ten weeks. Those who feared this provision and some others which increase the benefits accruing to in-

jured workmen, finally withdrew their opposition on promise of the Industrial Board that the Board would rigidly administer the law, so as to prevent such abuses as had arisen under the old Act. To this end the amended act requires that all medical bills be approved by the Industrial Board before they can be paid. The Board feels that it has demonstrated a sense of fairness toward the medical profession in the past, and that the confidence which it imposes in the profession's integrity and public spirit will merit a full measure of cooperation in the future. They approach the new duties imposed upon them actuated only by a desire to administer the act so as to secure equity to all groups concerned.

Physicians treating compensation cases are requested to keep the facts enumerated above in mind, to render only necessary services, to refrain from over-treatment, to make their charges commensurate with the injured's economic status and not to jeopardize the permanency of the new law by interpreting its liberalized medical section as giving license to profit regardless of the rights of other groups.

Costs under compensation are borne not by the insurance carrier or the employer, as so many believe, but by the consuming public. Because this is true the question of distribution of the funds arising from taxes imposed upon industry and designed primarily to benefit injured workmen becomes a legitimate problem requiring regulation in the public interest. Regulation is not an arbitrary invasion of the rights and prerogatives of any group concerned, but a necessary administrative procedure essential to the equitable purposes underlying this legislation.

Further information will be furnished from time to time bearing upon the question of fee bills and other medical problems. In the meantime, the sympathetic understanding and the full cooperation of the profession is earnestly solicited.

The Industrial Board will not abuse the regulatory power invested in it, but has no alternative except strict enforcement against those who fail or refuse to abide by the clear intent of the law.

Our thanks in advance for that consideration and cooperation, which is traditional with the members of a great profession.

ONE HUNDRED YEARS OF MEDICINE IN ATLANTA*

JAMES L. CAMPBELL, M.D.
Atlanta

Atlanta has long been recognized as the medical center of the Southeast. Thousands of people come from all parts of the country every year to receive medical attention in her hospitals and clinics under the care of her well qualified doctors and well trained nurses. One can scarcely realize that it has been only a hundred years since the Cherokee Indian medicine man with his charms and incantations, his weird cries and strange dances gave way to the pioneer white man's doctor, whose saddle bags were filled with crude drugs from which he measured, with his pocket knife, a dose of medicine for the baby or rolled a blue pill in the palm of his hand for the grandmother.

Dr. Joshua Gilbert, a graduate of the Augusta, Georgia, medical college, was Atlanta's first doctor. He was soon joined by his brother, Dr. William Gilbert, also a graduate from Augusta. These brothers married sisters, daughters of Charner Humphries, the builder and proprietor of the Whitehall Inn. It was to the front yard of this hotel that Atlanta's first "ambulance run" was made. A drunken loafer living in a shack nearby was cut by a neighbor who left at once for the woods. The wounded man's faithful wife loaded him on a sled and dragged him to Dr. Gilbert's house where he was stretched out on the grass, his wound sutured with a bagging needle and cotton thread. He was then loaded on a manure cart filled with straw and sent home.

During the next decade and a half many doctors were attracted to Atlanta. None of them, however, has left any record of his work. About the beginning of the second half of the century the Westmoreland brothers, John G. and Willis F., came to the city and opened up-to-date offices and a drugstore.

In 1854 Dr. John G. Westmoreland organized the Atlanta Medical College which continued in successful operation until the

outbreak of the war. In 1861 lectures were suspended and the building was used as a hospital until the close of the war. The college was reorganized in 1866 with Dr. John G. Westmoreland again at its head. In 1879 the Southern Medical College was organized and ran as an active rival to the old school until 1898 when the demands for better medical education made it necessary to unite the two institutions. The new school was called the Atlanta College of Physicians and Surgeons. In 1905 the Atlanta School of Medicine was organized and immediately became a creditable rival. To meet this competition the Atlanta College of Physicians and Surgeons erected new buildings and put in new equipment. Most important of all in the future development of the institution was the establishment in 1910 of full-time chairs in the sciences underlying the study of clinical medicine. To these chairs were called men who, by their training and the standard of their work, raised the general tone of the college and introduced the spirit of research in medicine. Again the profession realized that consolidation was better than rivalry; so in 1913 the schools were united under the historic name, Atlanta Medical College, and soon achieved a recognized standard of merit. In 1915 further prestige and strength of organization were secured through an university connection. The Atlanta Medical College became the School of Medicine of Emory University and the graduates of the contributing colleges were accepted into the body of Emory alumni. Such was the fruition of the work of Dr. John G. Westmoreland and those who followed him—men of culture and refinement, honor and integrity, who left their influence for good on more than 3,000 alumni.

Almost immediately after the Atlanta Medical College was organized in 1854 the faculty started a medical journal which attained considerable success. The Journal suffered reverses and had its name and management changed several times, but it lived until the birth of our present splendid publication, the JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA.

Early in the history of the city a medical society was organized. At first it was called the "Brotherhood of Physicians" and num-

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bered among its members most of the doctors in the city. Its name was changed several times between 1855 and 1895, but in the latter year the American Medical Association adopted its present constitution and by-laws and invited every county and state society in the United States to become a component part of the national organization. At that time the local society became the Fulton County Medical Society. For the last forty years it has made uninterrupted progress and now has more than 450 members. Well attended meetings are held twice monthly and provide a post-graduate course. Interesting cases are presented and well discussed, pathologic specimens are exhibited, a clinical talk is given, and a scientific paper read at each meeting. There are now four endowed lectureships which annually bring to Atlanta the most distinguished medical teachers in America.

The Society has, from time to time, placed before the public well written articles on the most common diseases from which our citizens suffer. It has been instrumental in securing the laws under which our local Board of Health and Sanitary Department conduct the health activities of the city. Its members are active in the work of such clinics as the Good Samaritan, the Tuberculosis Association, the Children's Clinic at the Central Presbyterian Church, and others. Each of these clinics is invited every year to report its work and give the full program at one of the regular meetings of the Society. In fact, there is no ethical health movement in which, as a society, it has not participated.

No city of its size in the South is better supplied with hospitals than is Atlanta. The first permanent one, St. Joseph's Infirmary, was organized by the Sisters of Mercy and has continued to give uninterrupted service since 1888. It is now one of the best equipped and best conducted institutions in the city. There are other outstanding denominational and private hospitals here where every form of disease to which the body is heir may receive prompt and efficient treatment. Five of these hospitals are equipped with the latest types of x-ray diagnostic and therapeutic machines. In addition, several private x-ray laboratories have machines that can nowhere be excelled. There is at the dis-

posal of patients who require radium therapy more than half a gram of radium element arranged in all the latest known types of applicators and some of our doctors who are specializing in this work have years of experience and long series of cases to their credit.

The Grady Memorial Hospital is an institution in which every citizen should feel a deep civic pride. It is devoted exclusively to the treatment of charity patients and is supported by the City of Atlanta and Fulton County. Shortly after the death of Mr. Henry W. Grady a movement was started to erect a statue to his memory. Mr. W. A. Moore, then the senior partner in the firm of Moore and Marsh, wrote a card to the *Atlanta Constitution*, stating that he would contribute \$5,000 in cash and a bequest of \$5,000 more in his will if the memorial to Mr. Grady was made a charity hospital. This suggestion gave birth to a long contemplated movement. A citizen committee headed by Mr. Joseph Hirsch was formed and soon had sufficient funds in hand to erect the first unit: an administration building, two wards for white and two for colored patients. From time to time improvements have been made and additions built until at present there are, in all its combined departments, more than 600 beds.

The management of Grady Hospital has changed many times. The first Board of Trustees was made up of a group of fine business men. Then Council changed the method of selection and appointed one representative from each ward. This resulted in a political Board. It was then turned over to the Council committee on hospitals and charities. This increased the political possibilities, both in management and in the medical staff. When Mr. James L. Key was elected mayor five years ago he appointed a non-political Board of outstanding business men who selected a well trained hospital executive, Mr. J. B. Franklin, and later a well qualified medical director, Dr. Joseph H. Hines. With reorganization the hospital began a new and vigorous existence and at the present time it may be considered the pride of Atlanta.

In 1892 the visiting professional staff of Grady numbered thirteen men. Today about 300 doctors are necessary to carry on its work. They represent every branch and

specialty in medicine, and give their services free of charge to the poor of Atlanta and Fulton County who are treated in the hospital and its clinics.

Atlanta has had two splendid gifts for charity hospital work. Seventeen years ago Mr. Albert Steiner left the residue of his estate for the relief of the poor and specified that it should be used for the medical and surgical treatment of "the poor of Atlanta." With this gift the Albert Steiner Ward of Grady Hospital was built, equipped, and dedicated to the treatment of cancer and allied diseases. Except for a small sum paid the resident staff, the City supports the Steiner Ward just as it does the other units of Grady Hospital. The generosity of Mr. Thomas Egleston made possible the Henrietta Egleston Memorial Hospital for Children. His will provided that a hospital be built and endowed for the care of indigent sick children. The appointments of this hospital are unexcelled and its value to suffering childhood is beyond computation.

The Scottish Rite Hospital for Crippled Children is a monument to the organization ability of Dr. Michael Hoke and is the pride of the Scottish Rite Masons of the South. It also received a liberal share of Mr. Steiner's wealth.

It is impossible to give even a short biographic sketch of the medical men of Atlanta who have contributed to the advancement of medical science. Some have attained national recognition as benefactors of humanity; many more have confined their labors to building up the city in thousands of ways known only to a narrow circle of friends and admirers. It will not do, however, to neglect to mention a few of those who have labored for the advancement of medical education and for the betterment of medical and surgical practice here and throughout the State.

The educational work of Dr. John G. Westmoreland and Dr. Willis F. Westmoreland has already been mentioned. The latter was a pioneer surgeon. He lived before the days of Lord Lister and antiseptic surgery; yet by his skill and splendid technic he was able to perform many successful operations hitherto unattempted in this country. He was also active in the work of organized medicine and did much to secure sound health

legislation for Atlanta and the State. Drs. Joseph P. Logan, H. V. M. Miller, J. C. Olmstead, Louis H. Jones, William Abraham Love, Miller B. Hutchins, Bernard Wolff, J. S. Todd, R. B. Ridley, L. Amster, V. H. Taliaferro, Hunter P. Cooper, and scores of others deserve honorable mention and their names will go down to posterity as those whose work was well saturated with "the priceless ingredient."

Dr. H. F. Harris did more original work and research than any other member of Atlanta's profession. He discovered hookworm disease in Georgia, recognized the presence of pellagra and sprue, and developed a tissue stain—hemotoxylin eosin—which is now used in all the laboratories of the world. At the time of his death he was working on a cure for cancer that had some of the possibilities of radium without the unpleasant reactions that may accompany the use of this agent.

Dr. Claud A. Smith developed the laboratories of the City Health Department and while working at Grady Hospital demonstrated the mode of transmission of hookworms from contaminated night soil to the human intestines.

In July, 1892, Dr. W. P. Nicolson did the first appendectomy in Atlanta. The patient, a young dental student, recovered and is now living in one of our nearby villages. Dr. W. S. Armstrong did several pioneer operations at Grady and the college clinic.

It has already been stated that the original visiting staff of Grady Hospital numbered thirteen men. There were four in medicine: Drs. C. G. Giddings, W. S. Kendrick, R. B. Ridley, J. S. Todd; four in surgery: Drs. W. S. Armstrong, Hunter P. Cooper, W. S. Elkin, W. P. Nicolson; three in gynecology: Drs. John G. Earnest, Virgil O. Hardon, G. H. Noble; and two in eye, ear and throat: Drs. A. W. Calhoun and Arthur G. Hobbs. Of these the only ones now living are Dr. Giddings and Dr. Elkin. Dr. Elkin's long service as dean of the Atlanta College of Physicians and Surgeons, of the Atlanta Medical College, and later of the School of Medicine of Emory University was an outstanding contribution to southern medical education.

Drs. W. S. Armstrong and J. B. Baird, faithful members of the Fulton County

Medical Society, worked untiringly in the City Board of Health for the improvement of sanitary and health conditions in Atlanta. They were always given the support of the Society. Dr. W. S. Kendrick was one of the best trained men of his day in internal medicine. Soon after he came to Atlanta he was elected proctor of the Atlanta Medical College and later dean of the Atlanta College of Physicians and Surgeons. He was active in organizing the Atlanta School of Medicine. Dr. E. G. Jones, his nephew, was one of Georgia's outstanding surgeons and medical organizers. As president of the Medical Association of Georgia he began to visit the district societies—a custom which has now been made a part of the regular work of the Association's president. Dr. E. C. Thrash and many other Atlanta doctors have served as president of the State Association. Dr. Thrash did splendid work in the Council of the American Medical Association of which he was a member at the time of his death.

The beautiful work done by Dr. Floyd W. McRae, Sr., and Dr. Willis F. Westmoreland was always an inspiration to the medical students of Atlanta. Dr. McRae was especially skillful in his abdominal work and took great pride in making his patients comfortable after the operation. Dr. A. W. Stirling was a great leader in organized medicine; he was three times elected president of the Fulton County Medical Society and did more than any other man of his time to upbuild it. Dr. E. Bates Block was a pioneer in the study of nervous diseases; his work and scientific articles were recognized as authority throughout the whole country.

Dr. E. C. Davis was an outstanding surgeon, gynecologist and medical teacher, and leader in military affairs. He represented Atlanta in two wars—the Spanish American and World War—and with Dr. Geo. H. Noble, organized in 1917 the Emory University hospital unit for service in Europe. Known as Base Hospital No. 43, the unit was mobilized at Camp Gordon, Ga., in January 1918, and was officered almost exclusively by members of the teaching staff of the Medical School. From June 1918 until after the signing of the Armistice, the organization functioned at Blois, France, giving unrivaled service to sick and wounded sol-

diers. Dr. Davis was in command of the Unit, with rank of lieutenant colonel.

No history of Atlanta Medicine could be complete without a paragraph devoted to Dr. A. W. Calhoun, the southern pioneer in diseases of the eye, ear and throat. When Dr. Calhoun began his eventful career there was little known of this branch of medicine. He lived to see remarkable developments and he contributed a large share to their perfection. He gave liberally of his financial means to the upbuilding of Atlanta medicine, the medical college and the local medical society.

These pioneers built sturdily on the strong foundations of professional sincerity, civic pride and love of humanity. How truly they labored is evidenced by the fact that their sons and grandsons have stepped into their places and today perpetuate their ideals in medical education and research.

Atlanta's greatness as a medical center is due to these and other equally loyal members of the profession. It is due also to the hospitals, to the medical college, and to the Fulton County Medical Society. For without organization there would be no health laws, no vaccination against smallpox or diphtheria, no prophylaxis against measles and other childhood diseases, no clinics for the poor, no Boards of Health; no medical libraries where, for his guidance, any doctor may find the latest reports and experiences of the great medical teachers.

In closing, mention must be made of one present-day pioneer who is enabled through the School of Medicine and Grady Hospital to carry on his work. Dr. J. R. McCord has given twelve years to research in maternal welfare and has reduced the incidence of maternal syphilis in his prenatal patients from 30 per cent to 17 per cent. He has practically eliminated this disease from the newborn on his service at Grady. His is a wonderful work and we hope he may live many years to perfect it.

Mr. Edwin R. Embree, President of the Julius Rosenwald Fund, announces a gift of \$100,000.00 to the American Hospital Association for the study and development of voluntary hospital insurance. The plan, known as group hospitalization, enables persons of moderate means to secure hospital care by small payments.

PERSISTENT EXOPHTHALMOS

SURGICAL TREATMENT BY RECESSION
OF THE LEVATOR PALPEBRAE
SUPERIORIS*Report of Case*STACY C. HOWELL, M.D.
Atlanta

Persistent exophthalmos is not unusual following thyroidectomy. While recession of the globe may occur, the protrusion may persist frequently as an unpleasant residual not to be controlled by therapy directed against the thyroid disease alone. This is especially true in those patients who suffer from the greater degrees of exophthalmos prior to surgery of the gland. In these people, pain in and around the eyes often becomes the major symptom for which they seek relief. The eyes in many such patients remain partially open so that portions of the cornea and conjunctiva are exposed. Others may be unable to close the eyes even with force. The results of such exposure may vary from moderate conjunctivitis with excessive lacrimation and pain to actual ulceration of the cornea and resulting blindness.

A number of procedures have been devised to combat this condition. The simplest, bandaging the closed eyes for sleep, is sometimes sufficient, but too often the lids retract when the patient becomes relaxed, and the bandaging material comes into contact with the globe, causing greater discomfort. Of the operative procedures that have been devised for the relief of this condition some are directed toward the protection of the eyes alone, while others reduce the actual protrusion. Narrowing the palpebral fissure by scalping the temporal portion of both lids and suturing the freshened edges together has been used in the treatment of persistent exophthalmos for many years. Since the exophthalmos is unaffected by such procedure, and since it has little if any cosmetic value, the operation is ordinarily reserved for patients in whom failure of the lids to close has produced exposure keratitis or conjunctivitis.

Jaboulay,¹ in 1896, and later Charles Mayo² resected the cervical sympathetic ganglion and thus accomplished actual recession

of the exophthalmos. Tinker³ also obtained recession of the protrusion by removing orbital fat through a Krönlein-Kocher osteoplastic (temporal) flap. In 1931, Naffziger and Jones⁴ described their method of removing the entire roof of the orbit through a frontal osteoplastic flap. The cranial and orbital cavities were thus made one and recession of the globe was obtained. While the results in these procedures have been satisfactory, such surgery is drastic. Chaillous,⁵ in 1907, was perhaps first to suggest lowering the upper lids as a treatment for exophthalmos. His technic was that of Truc, who accomplished elongation of the levator palpebrae superioris by means of the tongue flap method. A tongue was turned down out of the belly of the muscle and was sutured to the upper border of the tarsal plate where the normal insertion had previously been cut away. The approach was from the skin surface of the lid.

Report of Case

A woman, aged 36, had suffered from the classic symptoms of exophthalmic goiter for three years. Marked exophthalmos existed, measuring 25 mm. as determined with the exophthalmometer. Twenty months prior to her first visit for ophthalmic consultation, a sub-total thyroidectomy had been done with incomplete alleviation of symptoms. One year later, a complete thyroidectomy by Dr. Henry Poer gave satisfactory improvement of all symptoms except the exophthalmos which failed to recede (Fig. 1-A). The patient complained of constant pain in the eyes associated with redness and profuse lacrimation. In sleep the lids closed improperly, leaving the lower third of the cornea and adjacent conjunctiva exposed. The accompanying pain and lacrimation interfered with sleep. Bandaging the eyes was tried, but the lids invariably opened under the bandage allowing the material to come into contact with the eyes, thus aggravating the condition.

On Nov. 20, 1936, the left levator palpebrae superioris was recessed (B) about 1 mm. according to the technic shown. Twelve days later the right eye received similar treatment. Immediately following the operation improvement was noted. The upper lids, which had been carried in a position about 3 mm. above the limbus, now reached the upper edge of the pupil. The characteristic frightened stare of exophthalmos was much improved, (C). In sleep the lids were more nearly approximated and injection of the conjunctiva and lacrimation was diminished. The patient was more comfortable at all times. More sleep and greater comfort assisted in diminishing the nervous symptoms so that her general condition became more satisfactory than before the operations upon the lids.

Technic

In the case presented, the technic of Goldstein⁶ was



Fig. 1-A, after thyroidectomy. The exophthalmos continues to prevent full closure of the lids. In sleep the lower third of the cornea is exposed. The conjunctiva is injected. One ulcer has occurred, but has healed. B, the left levator has been recessed. The degree of exophthalmos of the right eye is well shown in this position. C, both lids lowered so that they reach the upper margin of the pupil. Patient now sleeps with eyes closed. The conjunctivitis has not yet entirely subsided. Note the calmness of appearance as compared with A, above.

followed. The upper lid was everted with the Ehrhart clamp and the conjunctiva was incised along the upper edge of the tarsal cartilage (Fig. 2-A). The levator muscle was thus exposed. An incision through the tarsal plate 1 mm. below its upper border freed the muscle from its insertion (B). The body of the muscle was then dissected free on both sides for a distance of 1 cm. from the cut end (C). Three double-armed sutures were passed through the muscle for the purpose of fixing it in its new insertion (D). The edge of tarsal cartilage remaining on the muscle was trimmed away. The sutures were then passed under the tarsus and brought out through the skin just below the brow, one in the center, one nasally, and one temporally. They were tied through guards of small rubber tubing. The conjunctiva was closed with a running stitch (E), and the eye was closed and bandaged (F). The conjunctival suture was removed three days later and the skin sutures were removed on the fifth postoperative day when the eye was allowed to be unbandaged. The same operation was later done on the other eye.

Comment

While exophthalmos persisting after thyroidectomy may be controlled by a number of surgical procedures other than operations upon the lids, these operations are drastic and the patients are ill-suited and often unwill-

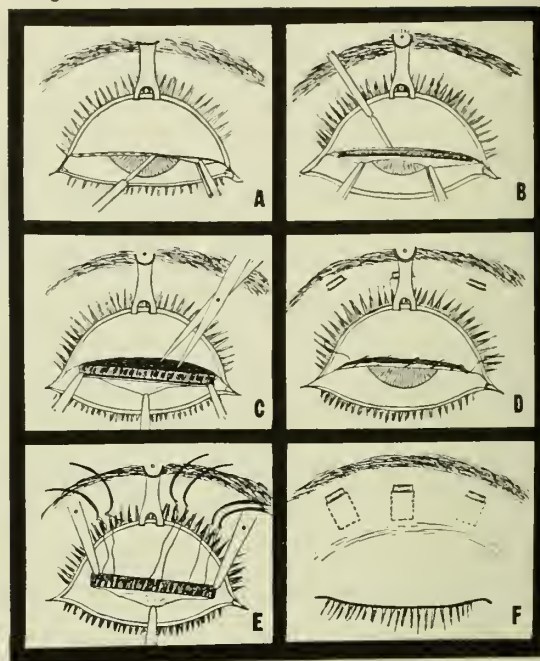


Fig. 2-A, the upper lid is everted with the Ehrhart clamp and the conjunctiva is incised along the upper margin of the tarsal plate. B, the conjunctiva is dissected free. The muscle is released by an incision through the tarsus, leaving about 1 mm. of cartilage attached. C, the muscle is dissected free on both sides for a distance of about 1 cm. D, three double armed sutures are placed in the muscle. E, the sutures are carried back under the tarsus and brought out through the skin just below the brow. The conjunctiva is closed with a running stitch. F, the sutures are tied through guards of rubber tubing.

ing to submit to such treatment. Suturing the temporal canthi is simple, but may produce dangerous pressure upon the globe. Recession of the levators is a simple procedure offering little danger of complication, and should be tried before more radical surgery is considered.

Conclusion

A case is reported in which recession of both levator palpebrae superioris muscles produced satisfactory reduction of symptoms produced by exophthalmos.

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Dr. Bret Ratner, Clinical Professor of Pediatrics at the New York University College of Medicine, New York City, spoke at a meeting of the Fifth District Medical Society held at the Academy of Medicine, Atlanta, on April 29th.

Dr. and Mrs. Hal M. Davison, Atlanta, entertained a number of friends at the Piedmont Driving Club in honor of Dr. and Mrs. Ratner.

INOCULATION AGAINST SMALLPOX IN GEORGIA

JOSEPH KRAFKA, JR., M.D.

Augusta

The practice of inoculation against smallpox was introduced into England by Lady Morley. She had observed the practice while in Turkey and was so impressed that she had her son inoculated when in Constantinople. Upon her return to London she had her daughter inoculated. Under the direction of Dr. Hans Sloane, the children of the royal family were treated in 1721. Dr. Boylston, sponsored from the pulpit by Cotton Mather, introduced the practice in America in the same year and inoculation rapidly became widespread.¹ Hence it is of interest that the early Colonial records for Georgia give no account of the practice, since Sloane was a patron of the colony.²

That smallpox was both endemic and epidemic in Georgia is established. William Stephens in his journal of the colony, speaks of a Moravian settler at Ebenezer with a full blown case of smallpox. He was working at the mill apparently none the worse for the disease.³ Again we find a record that 1,000 warriors were carried off by the smallpox and rum brought up to Augusta by unlicensed traders.⁴ When slavery was legalized in the colony in 1749, a quarantine law was established against smallpox and other malignant epidemical disease,⁵ and the law was invoked and supported by a company of Rangers in 1758 and 1759.⁶

The first positive proof of the practice of inoculation against smallpox in Georgia comes in the form of a law passed by the House of Assembly in 1768.⁷ "If any person whatever . . . within the province, shall Inoculate or Ingraft, or cause to be . . . the disease or distemper commonly called the smallpox . . . in or upon her, him or themselves, their family or slaves . . . or in or on any other person . . . or shall willfully or knowingly inflict . . . the said disease . . . or shall use any art or devise or contrivance whatsoever . . . every person . . . who shall offend in any of these premises . . . for every offense shall forfeit the sum of £100." (The law is so long in its entirety that only the signi-

ficant phrases are cited.)

That inoculation was practiced prior to this time is highly probable since Dr. Mowbray, a surgeon in Charleston, inoculated while traveling on a slave ship there in 1738.⁸

It seems plausible, however, that the law above was directed at a general extension of the practice for profit, since it carries a provision that no person shall build a hospital for the reception of patients within 800 yards of a public road. This follows just four years after the establishment of the first public hospital for smallpox in New England in 1764.⁹

The law recognized the practice, however, in that if at any time it was thought expedient to introduce inoculation, then it shall be lawful for the Governor on the advice of the Council, to give consent under such restrictions as they think proper.

This law was not the product of ignorance nor bigotry since it was signed for the Upper House of the Assembly by Noble Jones, the most outstanding physician in the colony at the time. It was probably drafted under his direction.

The law was further directed as a quarantine against the "plague" and malignant fever. It provided for an obligatory passport for the masters of ships; for the regulation of the lazaretto at Tybee (established by law in 1749) and prevented entrance of ships harboring sick sailors. The local pilots were to question either master, mate or ship's doctor, and false swearing was punishable by fine and by standing in the pillory.

Possibly this law was effective in keeping down the general practice of inoculation by unqualified persons, for it is interesting to note that at the time of the Revolution, the Southern soldiers were very much afraid of the smallpox and an appeal was made to Washington to allow a general inoculation in the army. This request was granted and the procedure carried out under the direction of Dr. James Tilton at Dumfries, Va.¹⁰

We have recently found one record in the account book of a practicing physician showing that inoculation was still carried out after the Revolution. The statement is for medical service presented by Dr. Cornelius Dysart to Mr. James Gardner, Augusta merchant. The entry is as follows: Feb. 2, 1793—inoculating and medicine for 2 negroes in the smallpox 18 .8.

*University of Georgia School of Medicine, Augusta.

With the introduction of general vaccination in 1798 by Jenner at St. Thomas' Hospital in London, inoculation came to an end. Dr. Victor Bassett has written the history of vaccination in the Southeastern States.¹¹ In a personal communication he states that Dr. Ewell, with virus secured from his friend and patron, Thomas Jefferson, began vaccinating in Savannah in 1801.

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CONGENITAL PEMPHIGUS

Report of Case

WALTER W. DANIEL, M.D.

A. J. AYERS, M.D.

Atlanta

According to DeLee¹ it is difficult to understand how a child in an intact sac becomes infected. He states that such infections occur but are rare. He tells of a woman who had two babies born with pemphigus, the only patient he knows of where such a condition has occurred twice. Rucker² reports a patient who delivered three nine-pound babies successively, all of whom had blebs about their nails at birth which developed into impetigo. Each infant died within ten to twelve days. Thorough examinations of father and mother were entirely negative. The fourth baby, a male, weighing more than nine pounds, was born with the same condition but was immediately anointed with ammoniated mercury ointment and lived. William Weston, Jr.³ reports a baby delivered by a cesarean operation who had congenital pemphigus.

Case Report

The health of both parents had been unusually good. The father, aged 29, had never had to consult a physician. The mother, aged 30, was a primipara who had had only one previous illness—influenza. Both parents had negative Wassermann reactions before and after the birth of the child and neither had ever had symptoms or signs suggestive of syphilis.

The mother first consulted one of us (W. W. D.) on



Congenital pemphigus. Baby 24 hours old.
Photograph by A. J. Ayers, M.D.

Nov. 4, 1935, at which time she was given a routine examination; all findings were favorable. Her last menstrual period was Aug. 25, 1935. Her health during the interval between her last menstrual period and delivery was normal. She was admitted to the hospital in labor on May 26, 1936, 10:20 p. m. Pains were every five to seven minutes and of thirty seconds duration. Membranes were intact. The cervix was fully effaced and dilated, about 3 cm. The head was in the fundus, breech presenting. At 8:30 a. m., May 27, the membranes ruptured. At 9:30 a. m., the patient was taken to the delivery room. At 10:40 a. m., a baby boy, weighing 6 lbs. 8 oz., was extracted.

Upon grasping the feet of the baby, the operator's hands slipped and it was observed that a handful of grayish-white skin, considerably thicker than normal, had sloughed off. This caused apprehension to the attendant, but the feet were again secured and extraction accomplished without difficulty. Primary respiration was sluggish and resuscitation was necessary.

In appearance the baby was well developed and well nourished. The feet and fingers were clubbed. Over the entire body, except the left side of the face, forehead and frontal part of the scalp, there were large flaccid bullae. Some of these had been ruptured in the manipulation of delivery—others ruptured easily. The outer layer of the skin stripped off in large patches and beneath it was a moist, raw, reddened surface covered with a sero-purulent fluid. There was little adhesion between the stratum corneum and the subjacent prickle layer. The mucous surfaces were also involved.

Recognition of an unusual condition prompted a request for consultation. Dr. Sam Perry was called and made a diagnosis of pemphigus neonatorum. Dr. A. J. Ayers also saw the baby, confirmed this diagnosis, and made photographs for permanent record. The baby lived 31½ hours.

The mother made an uneventful recovery and was examined on June 25, 1936, at which time she appeared to be in excellent health. The examination revealed no positive findings, although foci of infection were especially sought. She is anxious to have a child and wonders if her next child would be a victim of the same condition.

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HUMAN RUBBISH*

W. L. FUNKHOUSER, M.D.
Atlanta

For the past few years we have been in the midst of a social revolution. Radical changes develop controversial problems for study and solution. You young men, therefore, will have to solve the problem of human rubbish.

Burbank once said: "If no more attention had been paid to plant life than we do to human life we would be living today in a wilderness of weeds." The significance of his remark is just now being appreciated. It is human rubbish that bids fair to create the wilderness of weeds of our complex social structure. What is the source of this rubbish, how much do we have, where is it leading us, and what can be done about it?

The South's "poor white trash," so aptly named by the Negro, is no doubt the product of the physical and mental unfit, left in the wake of the War Between the States. In the North, they probably were the offspring of emigrants who were not wanted or were unadaptable to the environs of their birth. In the West, they are those who had to leave the South or East for various reasons, or left for the same reason the emigrant left his European home. Of course, many of our greatest men descended from emigrants, but so has much of our human rubbish. Let us take stock of this rubbish. It is true that much may be salvaged, but it will take both an understanding of the problem and money.

The White House Conference estimated that 15 per cent of our national population are feeble-minded, more than 18,000,000 people. Under favorable circumstances 13 per cent, or 16,000,000, may be self-supporting. Circumstances have not been so favorable the last few years, therefore is it not this group that furnishes the unemployed today? Eleven per cent of the people of Georgia are on relief rolls. The average educational record of those on relief is below the fourth grade. It is estimated that two per cent of the population of the United States, or over 2,000,000, are so feeble-minded that they will always be dependent. Goddard believes that 80 per cent of feeble-mindedness is congenital. It takes three children to maintain a family

stock, yet Yale and Harvard graduates average 1.5 children for each graduate. Graduates of women's colleges average less than one child for each graduate. Families of men of science have decreased in one generation from an average of 4.6 to 2.2. Thus, if the tide is not turned, there will be a great handicap to the future taxpayers of America, if indeed there are enough people capable of paying taxes.

There are 200,000 prisoners in penal institutions. One to two per cent of the entire population are criminals. Four of ten criminals are between 15 and 25 years of age. The annual loss to this country through the operations of criminals is estimated at ten billion dollars.

Another group of citizens to be dealt with is the mentally sick. There are more patients in mental hospitals today than in all other hospitals combined. All mental hospitals are overcrowded and many have long waiting lists. This does not take into account those who are at home under special care. In 1932 there were 427,343 inmates in mental hospitals. Twenty per cent leave, many of whom are readmitted after having a child. Georgia had in 1934 6,552 inmates in the State hospital, a ratio of 183.8 per 100,000 population. It is interesting to note that in 1880 the ratio was 40.6 per 100,000. Of first admissions in Georgia in 1934, there were 1,086—648 males and 438 females—a ratio of 35.2. In 1934 there were 293 readmissions, a ratio of 27 per 100 first admissions. One-half of those admitted to mental hospitals never recover sufficiently to leave the institutions. In 1931 there were 12,000 individuals murdered. In the same year there were 20,000 suicides, 14.9 per 100,000 population; and 35,400 attempted suicides.

The above discussion does not consider congenital hearts, deformities, epileptics, syphilitics, psychopaths, or the products of unhealthy environs who have not come into conflict with society. There are in Fulton County 4,434 unemployables, representing 2,641 families; with their children, this is a total of 10,933 individuals to be cared for.

It is doubtful if the future will be as gloomy as it looks, for nature is a great equalizer if left alone. The medical profession, however, is reducing infant mortality and

increasing longevity, salvaging the unfit to become a care to family and State; yet it is doing little or nothing toward enforcing the laws of eugenics, sterilization and birth control. The legal profession is passing and enforcing laws without a study of the mental and emotional background involved, which is responsible for a large percentage of crime. Little thought is given to cause, but much effort is directed to prosecute or defend the offense. It will take centuries and millions of dollars to adequately salvage our present quota, even if we could stop at once its multiplication.

The time may come when it will be necessary to resort to euthanasia for those who are mentally and physically beyond scientific restoration to some degree of physical and mental health and happiness. Watson says that there should not be a child born for another twenty-five years except for experimental purposes.

What can be done? I have no definite solution for the problem but can offer a few thoughts for your consideration.

1. Education of the parents, children, teachers, employers, employees, physicians, clergymen, judges, and the public at large, to the problems and methods of approach to mental health and what it entails. No one is 100 per cent normal emotionally. Some people are emotionally unstable and defy authority of any kind. We all "fly off the handle" occasionally, we want our way or we get grouchy and we dislike authority, but control ourselves within sane limits. The psychopath loses control and runs to extremes. "The highest degree of mental life permits the individual to realize the greatest success which his capabilities will permit, with a maximum of satisfaction to himself and the social order and a minimum of friction and tension. This implies a state of such well-being that the individual is not conscious of unsatisfied tension, does not show inadequate or objectional behavior socially, and maintains himself intellectually and emotionally in any environment under any circumstances."

2. The voting franchise should be given only to those of normal mentality. An individual with a chronologic age of 21 but with a mental age of 9, should not be granted the

right of ballot. This would eliminate all morons, who actually constitute a large percentage of voters, especially those controlled by ward heelers. We could then have statesmen instead of politicians as office holders.

3. All criminals, especially juvenile delinquents, should be given indeterminate sentence, to be released only when capable of rehabilitation; paroled not by a board or a governor, but by a psychiatric clinic which is not under control of politicians; juvenile delinquents should not be sentenced to institutions for hardened criminals but studied either in special institutions or clinics, paroled in wholesome environment, or placed where they can be made useful citizens, if such is possible. There should be a uniform effort of all persons to study the prevention of crime. Criminals are not born but are made. Children at birth are not good or bad. They are transformed one way or another. In childhood the emotions are developed and habits of conduct are acquired, social or anti-social, criminal or law abiding. The extent to which we learn to control our emotions depends on the home, school, church and neighborhood. Crime is the product of heredity and environment. Young offenders often have something wrong with their intelligence, emotions or health. These defects do not make criminals, but if they are not recognized and properly corrected, in some instances protected, the individual is more likely to be led into crime. If the children are feeble-minded, they do not have the capacity to develop into normal individuals and if they are not placed in special classes or given proper vocational training suitable to their capacity, they compensate easily by drifting into crime. If the emotions are not properly directed the child may seek an environment that gives the expected thrill. It may be more fun to attend a cheap movie than to attend school, or to indulge in petty thievery than to master the multiplication table. If there is a physical handicap that causes failure in scholastic work, such a child may compensate by being a terror at school or succeed in the adventures of the gang. A bad home environment could have made criminals of us all. I have been thrilled to see at the Hillside Cottages a child from whose home the father was sent to the penitentiary; the mother was

a prostitute. The child had been a thief and liar. After entering his new home and having a bath, clean clothes, his own locker, own toilet articles, own toys and told that he would not be punished if he always told the truth, he was transformed almost instantly into a normal child. The creating of wholesome environment at home and play, with the development of big brother clubs, child-guidance clinics, and other methods adaptable to the needs of every community, may not solve all the problem, but will prevent a large percentage of crime. It has been said that "when a child goes bad a good man dies"; it should be added, however, that if a child goes bad he becomes a national liability.

4. Sterilize all individuals who are not physically, mentally or emotionally capable of reproducing normal offsprings.

5. Birth control should be taught when the economic status precludes adequate care. Families receiving relief had a birth rate 54 per cent higher than those not on relief. From Oct., 1932, to Oct., 1933, nearly 300,000 children were born to families receiving public aid. In fact, as it is today, many persons on relief are making a racket of government aid. There has been developed a group of people who enjoy pauperization, actually capitalizing their vote to maintain their pauper status. These families, over 3,000,000, had nearly 2,000,000 children under six years of age. The explanation no doubt is that the man who shows no judgment about the number of children he has, is likely to lose his job in a crisis, because of lack of judgment along all lines. A social history from the files of the Children's Hospital is explanatory: Mother is in jail; the oldest son, 17, is in jail. The mother divorced her husband after the birth of her first son. She then ran away with her father-in-law, who was married and had a family. They started a new family, having seven children; the youngest is 14 months of age, the oldest, 14 years; then the father deserted his second family.

Conclusions

Contrary to the Constitution of the United States all men are not born equal—physically, mentally, or economically. We have no right, even if we do pride ourselves on the

fact that this is a free country, to bring into the world a child who is physically or mentally unfit to meet the exigencies of life. Neither is it right that a child should enter life in an economic environment that allows no chance for health, education and the pursuit of happiness.

There is no progress in civilization unless the children excel their parents.

We might well copy the social organization of the common honey bee to better our human, social and economic status.

"We talk of our breed of cattle, and plan for a higher strain,

We double the food of the pasture, we heap up the measure of grain,

We draw on the wits of the nation, to better the barn and the pen;

But what are we doing, my brothers, to better the breed of men?"

*Address before the Alumni Banquet of the Phi Chi Fraternity, Baltimore Hotel, Atlanta, February 26, 1937.

OFFICIAL CALL

To the Officers, Fellows and Members of the American Medical Association:

The eighty-eighth annual session of the American Medical Association will be held in Atlantic City, New Jersey, from Monday, June 7 to Friday, June 11, 1937.

The House of Delegates will convene on Monday, June 7.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, June 8, at 8:30 P. M.

The various sections of the Scientific Assembly will meet Wednesday, June 9, at 9:00 A. M., and at 2:00 P. M., and subsequently according to their respective programs.

CHARLES GORDON HEYD, *President*

NATHAN B. VAN ETEN,

Speaker, House of Delegates.

Attest:

OLIN WEST, *Secretary.*

Chicago, Illinois, March 15, 1937.

HOUSE OF DELEGATES

The House of Delegates will convene at 10:00 A. M. on Monday, June 7, 1937, in the Renaissance Room of the Ambassador Hotel, Boardwalk at Brighton Avenue.

REPRESENTATION

The apportionment of delegates made at the Cleveland Session of 1934 entitles your State Association to three delegates for 1935-36-37.

"A member of the House of Delegates must have been a member of the American Medical Association

and a Fellow of the Scientific Assembly for at least two years next preceding the session of the House of Delegates at which he is to serve.

"Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one half, as near as may be, shall be elected each year. Delegates and alternates elected by the sections, or delegates appointed from the United States Army, United States Navy and United States Public Health Service shall hold office for two years.

—*Chap. 1, Secs. 1 and 2, By-Laws.*

RULES FOR THE GUIDANCE OF THE COMMITTEE ON CREDENTIALS

*Adopted by the House of Delegates at Atlantic City,
N. J., June 6, 1912*

1. Credentials shall be of two parts. The first part shall be sent to the office of the Secretary of the American Medical Association by the secretary of the constituent association, not later than seven days prior to the first day of the first meeting of the House of Delegates, and shall be a list of delegates and alternates for that association. The constituent associations shall designate an alternate for each delegate, who may take the pledge of the delegate when authorized to do so by said delegate in writing. In the absence of such authority, any alternate who has been duly chosen by the constituent association may be seated in place of any delegate who is unable to attend, provided he presents proper official authority from said association. A certificate signed by the president or secretary of the constituent association shall be deemed legal authority (as amended June 7, 1921).

2. Each delegate shall be furnished with a credential by the secretary of the association by which he is elected on a prescribed form furnished by the Secretary of the American Medical Association, which shall give the date and term for which he was elected and who was elected to act as alternate for him in case of his inability.

3. A delegate, on presenting himself to the Committee on Credentials, may be seated even though he may not present part 2 of his credential, provided he is properly identified as the delegate who was elected by his association and whose name appears on the Secretary's record.

4. No alternate may be seated unless his credentials meet the same requirements as designated for the delegate and he can show written evidence that he is empowered by his delegate to act for him, except as provided for in Section 1 as amended (as amended June 7, 1921).

5. When a constituent state association reports that one of its elected delegates and his elected alternate are both unable to attend a specified annual session of the American Medical Association, the constituted authority of said constituent state association may fill the vacancies caused by the absence of both an elected delegate and his elected alternate, and such a substitute delegate or his substitute alternate who presents proper credentials signed by the president and secretary of said constituent state association shall be eligible to regular membership in the House of Delegates of the American

Medical Association in such a specified session (as adopted, May 12, 1932).

SCIENTIFIC ASSEMBLY

The Opening General Meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held Tuesday evening, June 8, 1937, at 8:30. The Sections will meet on Wednesday, Thursday and Friday, June 9, 10 and 11.

Convening at 9:00 A. M. the Sections on:

Practice of Medicine.
Obstetrics, Gynecology and Abdominal Surgery.
Laryngology, Otology and Rhinology.
Pathology and Physiology.
Orthopedic Surgery.
Urology.
Preventive and Industrial Medicine and Public Health.

Miscellaneous Topics.

Convening at 2:00 P. M. the Sections on:

Surgery, General and Abdominal.
Ophthalmology.
Pediatrics.
Pharmacology and Therapeutics.
Nervous and Mental Diseases.
Dermatology and Syphilology.
Gastro-Enterology and Proctology.
Radiology.

REGISTRATION DEPARTMENT

The Registration Department will be open from 8:30 A. M. until 5:30 P. M. on Monday, Tuesday, Wednesday and Thursday, June 7, 8, 9 and 10, and from 8:30 A. M. to 12:00 noon on Friday, June 11, 1937.

CASE RECORDS OF THE COLUMBUS CITY HOSPITAL

W. EDWARD STOREY, M.D.
Columbus

Intense Pharyngitis, Fever, and Delirium in a Middle-aged Woman.

A white woman, aged 41, was admitted to the hospital with the history of sore throat, fever, and dysphagia with moderate cervical swelling of two weeks' duration. For 3 days she had been delirious. Prior to the onset she had been in good health and there was no similar illness among her relatives or neighbors; her past and family histories were irrelevant. Aside from losing 8 to 10 pounds weight nothing else had been noted. She was a textile worker but was not exposed to chemicals.

Physical examination showed a sallow, feverish, restless, weak woman. Her voice was hoarse, her speech thick, and she swallowed with difficulty. The teeth were badly neglected and there were severe stomatitis, gingivitis, and pharyngitis with dirty, grayish patches on the fauces. The post-cervical nodes were 2 to 3 cm. in diameter, soft, tender, but not matted or adherent to the skin; otherwise there was no lymphadenopathy.

There were scattered purpuric areas 1 to 3 mm. in diameter over the chest and abdomen. The lungs were clear and the heart presented nothing abnormal. Abdominal tenderness, spasm, mass, or fluid were not detected and the liver, spleen, and kidneys were not palpable. The spine was without evidence of disease and the extremities showed no abnormal reflexes or edema. Pelvic and rectal examinations were negative.

A smear of the throat revealed no unusual or predominating organism. The urine contained a trace of albumin and the blood count was as follows: R.B.C. 3,380,000; Hb. 70 per cent (Sahli); W.B.C. 166,000; the predominating cell resembled the large monocyte (90 per cent), polymorphonuclear neutrophils 4 per cent, and lymphocytes 6 per cent. A blood culture was negative after 48 hours.

A tentative diagnosis of acute monocytic leukemia was made with the reservation that the case might prove to be one of infectious mononucleosis with an unusually high white cell count (usual upper limit 125,000). Smears were forwarded to Dr. Roy R. Kracke of Emory University, Ga., and to Dr. William Dameshek of Boston, Mass. The detailed description of the predominating cell made in the hospital laboratory was as follows: "Wright's modification of the Romanowsky staining technic. The cells range in size from 14 to 21 micra, being approximately two to three times the size of the adjacent red cells. The nuclei of the majority are round or a little flattened on one side and usually eccentrically placed; occasionally the kidney shaped nucleus is seen. The nuclei stain a dark purple and the chromatin is arranged in strings and clumps, being fairly clearly distinguished from the parachromatin. Nucleoli are either absent or confused with the chromatin clumps. The cytoplasm is blue-gray and foamy; it is definitely not granular in the vast majority of the cells. Probably 20 per cent of the cells contain vacuoles in the nucleoplasm or the cytoplasm or both and these are large and small. The red cells are moderately achromic and there is almost a complete absence of thrombocytes. Impression from smear: Acute Monocytic Leukemia (W.E.S.)."

Dr. Roy R. Kracke reported: "After carefully studying the predominant cell type I am convinced that it is a blast cell or stem cell, therefore I have no hesitancy in diagnosing this as an acute stem cell leukemia. As to what series of cells they spring from is open to question. One guess is about as good as another. I am inclined to think that they are myeloblasts of both types, macromyeloblasts and micromyeloblasts. I do not believe that this is an infectious mononucleosis. I have never seen one with a count that high. In addition, this woman has an anemia and also, apparently, a thrombocytopenia. A lack of lymphadenopathy or splenomegaly would not rule out leukemia in its acute form, so to summarize my impression I believe this is an acute leukemia with the predominating cell type so immature that it could not be differentiated."

Dr. William Dameshek of Boston said: "It appears from the smears that you are dealing with a very acute leukemia. The cells are extremely immature, most of them being very immature 'blasts'. What tendency to differentiation there is, appears to be toward the myeloid

series so I think the case is one of acute fulminating myelogenous leukemia."

On the seventeenth day of illness the patient died in coma. Complete necropsy revealed scattered petechiae on all the serous surfaces, and evidence of circulatory passive congestion in the lungs, pericardial sac, liver, and abdominal cavity. Section of every organ disclosed no gross evidence of disease; the mesenteric and mediastinal lymph nodes and spleen especially presented nothing remarkable. Microscopic sections revealed nothing except focal necrosis, cloudy swelling, and droplet degeneration in the liver parenchyma and cloudy swelling and fragmentation of the myocardial fibers. Everywhere the capillaries were full of the predominating cells. Unfortunately, due to technical error, the bone marrow preparations proved worthless.

Diagnosis: Acute Stem-Cell Leukemia (probably myelogenous).

Comment: This case is instructive because: (1) this and other serious diseases may first manifest themselves by the simple features of sore throat and fever and therefore a blood smear should be routine, (2) lymphadenopathy and splenomegaly are not necessary for the diagnosis of either type of acute leukemia, (3) it is sometimes impossible to say with certainty whether an acute leukemia is of the lymphogenous or the myelogenous type, (4) the expert hematologist can distinguish stem cells easily by their special characteristics but the practitioner and the average technician are apt to confuse them with monocytes.

511 Swift Building.

PROSTIGMIN AS AN AID IN DIAGNOSIS OF MYASTHENIA GRAVIS

A. M. Harvey and M. R. Whitehill, Baltimore (*Journal A. M. A.*, April 17, 1937), show the value of prostigmin as an aid in the diagnosis of myasthenia gravis. In nine cases in which there was a fairly definite clinical picture the response to the injection of prostigmin was prompt and striking. In one case of doubtful diagnosis there was no response. If myasthenia gravis was present in this case it was in a state of remission. It is possible that the action of prostigmin is effective only during a period of exacerbation. In thirteen cases of neurologic disorders in which muscular abnormalities or cranial nerve palsies were prominent features there was no response, suggesting that immediate improvement following a single dose of prostigmin occurs only in myasthenia gravis. The value of prostigmin as a therapeutic agent has not been definitely established. The reports in the literature concerning the use of prostigmin in the treatment of myasthenia gravis are conflicting. Although the use of prostigmin by mouth is the most satisfactory treatment for these patients at the present time, the results in the present series of cases have not been as completely satisfactory as most of those previously reported. Some patients are not completely relieved of symptoms by its use.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

MAY, 1937

**EXAMINATIONS IN
OTOLARYNGOLOGY**

Certificates attesting competence in otolaryngology have undoubtedly achieved considerable popularity. Indeed, so much they are in demand that the American Board of Otolaryngology has announced that on January 1, 1938, the practice of granting certificates "formally," that is, without examination, will be discontinued. After that date all who receive certificates will be required to take the tests, both oral and written, which includes pathology. Thus it appears that increased difficulties are to be encountered in the process of being certified in this particular field.

Designed to elevate the standards of otolaryngology and to protect the public from those who are insufficiently qualified, the American Board of Otolaryngology was organized some years ago through the combined efforts of the special societies relating to this work, and the Section on Laryngology, Otology and Rhinology of the *American Medical Association*. Actuated by ideals of the highest order, its activities have doubtless been an influence for good, although to what extent, no one could venture an estimate. Neither can its ultimate benefactions be foretold. These of necessity depend on the degree of interest and cooperation. Other than those who are directly concerned, neither this nor any other board representing the special fields of medicine and surgery are at all well known to members of the medical profession. As far as the people are concerned, it will take even the intelligentsia a century to become conscious of their existence.

To those who contemplate appearing before the board, it may be of interest to recall certain phases of the procedure. The examinations are, of course, taken voluntarily, and all rights of contesting the outcome of them

are waived by the applicant. It is, therefore, apparent that those who are examined are entirely at the disposal of the examiners. An announcement of the last examination conducted indicated that of 120 candidates examined, 103 were successful. Four or five weeks elapse before an applicant is informed of the results of the examination.

The candidates are interviewed by five or six examiners, each requiring fifteen to thirty minutes, depending on the facility with which the subjects are dispatched. In addition, a written examination is given, and practical work in the laboratory in identifying microscopic and gross specimens. The schedule for the examinations occupies the greater portion of two days. It has been complained that if the examinations were conducted with more systematic effort the time consumed by them would be materially lessened. Whether this complaint is well merited is not entirely clear. At any rate, this is a minor difficulty, and will be remedied in due course of time.

All too frequently it is assumed that the questions considered in the examinations are casual and mere formality. As a result of this misconception, many applicants neglect to prepare themselves adequately, with the consequence that a rather high percentage of failures is recorded. Prospective candidates should be impressed with the fact that the examinations are thorough, requiring that the applicant practically memorize the subjects embraced in a standard treatise on diseases of the ear, nose and throat. Depending on the length of time one has been in special practice, the examinations differ. Those who have had ten or more years of experience are given more didactic and clinical work; the younger applicants deal more with anatomy and pathology.

These statements are not presented with the view of offering discouragement to those who would seek the certificates. They are submitted solely for the purpose of emphasizing the necessity for careful study before appearing before the board. One of average ability should meet with no insurmountable obstacles if precautions are taken.

The examinations are conducted at the meeting place of the American Academy of Ophthalmology and Otolaryngology, just

prior to its convening. A session is also usually held in connection with the meeting of the *American Medical Association*. It has been announced that the next meeting will occur in Philadelphia, June 7-8, and in Detroit during September.

S. J. LEWIS, M.D.

BURNS

During recent years a reduction of morbidity and mortality has been accomplished by standardizing the treatment of burns. This has been brought about by the recognition of the pathologic changes occurring during the three periods: first, the secondary shock; second, the so-called toxic period; and third, the period of complications. The treatment rendered during the first period governs the changes seen in the later stages.

The local reaction in the *trauma* is insignificant compared to *systemic* manifestations, both in the blood and vital organs. The management of local wounds with disregard of these generalized changes is futile. However, proper care of the surface areas in a great measure lessens the effects. Efforts should be directed toward lessening and preventing shock before attention is rendered the area burned. The greatest error is likely to occur at this time in a failure to recognize the seriousness of the borderline cases. It has been shown that burns with 5 to 10 per cent body surface involved produce early widespread manifestations.

Each of these cases should, therefore, receive sufficient parenteral fluids to replace that which has been lost at the site of the injury and in the tissues. In this manner is prevented the concentration of blood and a decrease in volume with subsequent cellular destruction of the vital organs, particularly the liver, kidneys and heart. The use of *blood transfusion* and *acacia* are preferable to normal saline since they remain in circulation and are not lost in the tissues. However, *saline* is of benefit in prevention of the diminution of the blood chlorides. The accessory measures for treating the shock are extremely beneficial, particularly the use of adequate *opiates* for the relief of pain.

After response has been made to the treatment of the shock the burned area is con-

sidered. Any local application must relieve pain, lessen the likelihood of infection, prevent the loss of fluid from the surface and, finally, stimulate healing. *Tannic acid* used either in the form of an aqueous solution or in the tragacanthic bases qualifies as such. Other substances have been used to protect the surface by the formation of coagulum but none is more advantageous than tannic acid. The addition of 10 per cent *silver nitrate* solution after the application of tannic acid will hasten the formation of a protective covering over the raw areas. This type of local treatment usually is sufficient in most cases. There are some instances in improperly prepared cases where infection occurs under the coagulum. This to a great degree can be prevented by the removal of all loose skin and debris from the surface. In the event of its occurrence treatment for any infected wound should be instituted.

J. D. MARTIN, JR., M.D.

HONOR ROLL FOR 1937

1. Randolph County, Dr. W. G. Elliott, Cuthbert, September 28, 1936.
2. Dougherty County, Dr. I. M. Lucas, Albany, December 12, 1936.
3. Taylor County, Dr. R. C. Montgomery, Butler, January 11, 1937.
4. Crisp County, Dr. L. O. Wooten, Cordele, January 13, 1937.
5. Wayne County, Dr. A. J. Gordon, Jesup, January 23, 1937.
6. Hall County, Dr. Hartwell Joiner, Gainesville, January 27, 1937.
7. Monroe County, Dr. G. H. Alexander, Forsyth, January 30, 1937.
8. Rockdale County, Dr. H. E. Griggs, Conyers, February 1, 1937.
9. Hancock County, Dr. H. L. Earl, Sparta, February 5, 1937.
10. Morgan County, Dr. W. C. McGearry, Madison, April 20, 1937.
11. Ware County, Dr. Kenneth McCullough, Waycross, April 20, 1937.

The Association will meet in the City Auditorium, Macon, May 11, 12, 13, 14, 1937. Hotel Dempsey will be headquarters.

The JOURNAL would like to record the scientific work of Georgia doctors. It earnestly requests, therefore, that each physician in the State who publishes a contribution in some other medical periodical submit an abstract of the article for these columns.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

REDUCED POSTAL RATES ON BACTERIOLOGIC SPECIMENS

After much study, many conferences and submitting several forms to postal authorities, the State Department of Health obtained reduced postage rates on bacteriologic specimens. It was necessary to reconstruct all laboratory forms in order to secure for the specimens the third and fourth class postage rates. Under this arrangement the specimens are pouched with letter mail and are transported with first class matter.

In the following table the postage requirements of the various outfits at the old and new rates are compared:

Outfit for	Old Postage Rates	New Postage Rates
	First Class	Fourth Class
Stool Culture	18-21 cents	6 cents
Sputum	15-18 cents	4½ cents
Diphtheria	6- 9 cents	3 cents
Gonococcus	3 cents	1½ cents
Malaria	3 cents	1½ cents
Intestinal parasites	3 cents	1½ cents
Wassermann	9 cents	3 cents

A color scheme has been adopted in printing the laboratory forms in order to call the attention of physicians to the difference in the forms to be used when requesting the various kinds of examinations.

The form on WHITE paper is for use in requesting the Wassermann and Kahn tests on specimens of blood and spinal fluid. These forms are enclosed with the Keidel tube outfit.

The form on BLUE paper is to be used in requesting the agglutination tests for typhoid, typhus and undulant fevers, tularemia and blood culture. Some of these forms are enclosed with each package of Keidel tubes. The forms on PINK paper are to be used for specimens on which other kinds of examinations are requested, such as malaria, tuberculosis, diphtheria, etc. These forms have lines on which the kind of specimen, together with the kind of examination desired, are to be inserted. They are supplied with the various specimen outfits.

Since the laboratory is divided into various departments for the examination of specimens, it is urgently requested that physicians submit two or more laboratory forms when he desires two or more kinds of examinations of the same specimen. For example, if a liquid specimen of blood is submitted for one or more of the fever tests, or blood cultures, and the physician, since the specimen is already drawn, should desire the serologic test

for syphilis in addition, then he should enclose two laboratory forms, one (*blue*) for requesting the fever tests or culture, and another (*white*) on which he requests the Wassermann or Kahn tests. If a blood smear from the same patient should be enclosed for examination for malaria, a third form (*pink*) should be prepared and enclosed.

If the physician fails to comply with the instructions printed on the forms, he not only places in jeopardy the privilege of the reduced postage rates but causes the time of the technician to be consumed in making transcripts of data for another department of the laboratory where a portion of the specimen is referred for examination.

All outfits containing the revised forms also have revised labels permitting reduced rates of postage. Physicians are requested to order from the laboratory new specimen forms and labels for old outfits on hand; otherwise it will be necessary to pay first class postage when sending specimens in them.

Physicians are urged to use proper forms in making requests for examinations, as any request other than that provided for on any particular form automatically subjects the specimen to the first-class postage rate. The labels on all outfits now permit opening and inspection of the contents. If information other than that called for on the laboratory form is found, then postage due, together with a penalty, is attached which has to be paid by the laboratory before delivery is made. Then, too, the more often the postal authorities find this mailing privilege violated the more inspections will be made, thereby causing delay of delivery of specimens.

Reports by wire will be made only upon the written request and at the sender's expense. Requests for wired reports may be written on the specimen form provided the sender pays first class postage on the package. Exception to this rule is made in the case of examinations for rabies, reports for which will be wired unless otherwise specified.

Specimen information forms will be furnished upon request. It is suggested that physicians read carefully these forms and fill them out as legibly as possible so as to facilitate the prompt reporting of results of examinations. Compliance with the provisions of these forms will prove of benefit to both the physician and laboratory.

E. L. WEBB, A.B., *Serologist.*

The American Medical Association will meet in Atlantic City, N. J., June 7-11, 1937.

THE WASSERMANN AND KAHN TESTS

In the serodiagnosis of syphilis there have been many tests evolved. Each of them has advantages and disadvantages as compared to the others. Some are thought to be too sensitive, others not sufficiently sensitive. Although the infallible test has not been achieved and may be far distant, the modern procedures employed show considerable improvement over the older methods as to both sensitivity and specificity.

The serology of syphilis is probably relied upon more than any other single factor in the diagnosis and treatment of the disease. In fact it is the chief guide in treatment. The clinician should not, however, rely wholly on the laboratory report, but should consider it as one of the factors in arriving at his diagnosis.

The Wassermann test is a long, drawn-out complicated procedure, employing four reagents in addition to the patient's serum, with periods of incubation during the process. This test depends upon the principle of the fixation of complement by the syphilitic reagent in the presence of antigen.

The Kahn test is much simpler in its operation and requires much less time in its performance. It depends upon the principles of precipitation resulting in the action of syphilitic reagent on the antigen when the patient's serum is mixed with this reagent and shaken. This test requires of the technician just as much skill and care as does the more complicated Wassermann test.

In a recent questionnaire survey by the Georgia State Department of Health Laboratory it was found that Kolmer's modification of the Wassermann test was employed by a larger number of public health laboratories of the various states and larger cities than any other procedure in the field of complement fixation. Likewise the Kahn test was employed more than any other method in the field of precipitation in the same laboratories. In the United States these two tests enjoy the reputation of outstanding merit in the serologic diagnosis of syphilis.

The laboratory of the Georgia State Board of Health has employed one of Kolmer's modifications of the Wassermann test for several years. For the past few years it has also performed the Kahn test in addition to the Wassermann, upon the request of the physician.

During this time more than 50,000 specimens have been examined in parallel by the two methods. It was found that 91.4 per cent of the specimens showed identical agreement in terms of plus and minus reactions. For example, specimens showing a four plus, two plus, doubtful and negative reaction by

one test showed the same degree of reaction by the other. Classified in the usual accepted way, four, three and two plus reactions as positive and one plus and doubtful reactions as negative, complete agreement in this series is 94.6 per cent. The relative agreement, positive or negative by one test and doubtful by the other, is 2.9 per cent. It was found in this study that only 2.5 per cent of the specimens showed disagreements; that is, positive by one test and negative by the other. In the disagreements the Kahn test gave the greater number of positive reactions.

It is well to mention in this connection that clinical data was sought in the first 10,000 specimens paralleled. Questionnaire cards relating to the history and symptoms of the patient were attached to laboratory reports. Physicians cooperated well, returning 93.4 per cent of the cards. Clinical manifestations usually pointed to positive diagnosis in the cases of disagreement between the two tests.

It must be borne in mind that the higher the percentage of positive serologic reactions encountered in routine work, the higher the discrepancy in reactions is likely to be. We would not expect to find as many disagreements of results in non-syphilitic as in syphilitic patients. The average percentage of positive reactions in routine examinations for the time covered in this study, ranged from 18 to 20 per cent. Employing the same procedures, laboratories would probably find fewer or more discrepancies dependent upon the average percentage of positive reactions in routine work.

As to the superiority of the two tests, one should not be too dogmatic of this debatable question, for each has its advantages and disadvantages. The Kahn test is usually considered a little more sensitive, especially in checking on treatment. This does not mean that the examiner will not encounter some specimens which will give positive Wassermann reactions and yet react negative to the Kahn test. The Wassermann test is considered by some serologists to be better adapted for the examination of spinal fluids.

It has been the desire of the laboratory of the Georgia Department of Health to be able eventually to perform both tests on all specimens routinely. It was thought that this procedure would be of considerable help to the clinician in establishing a diagnosis in some doubtful and obscure cases and would serve as a better guide in the treatment. It must be admitted, however, that in some cases a discrepancy between the two tests is confusing. The publicity given the venereal disease problem recently has made this impracticable for this laboratory. The receipt of specimens since the first of 1937 has increased 50 per cent over the corresponding

period of 1936, in which year 82,000 specimens were examined.

It must be borne in mind that more reliance is to be placed in one examination where time will permit adequate care than in a multiplicity of procedures hurriedly performed. And yet with a large volume of specimens to be examined daily, speed as well as accuracy has to be insisted upon.

The continued increased demand for this kind of serologic work has compelled a change of policy in some respects. Since specimens are received in large groups from surveys by local health organizations, applicants for employment, barbers, beauticians, food handlers, penal institutions, clinics, etc., it was decided to perform only the Kahn test on these and similar groups in which the serologic test was required as a routine part of the general physical examination. The Wassermann test will continue to be employed as may be requested by the practitioner. However, if he should prefer the Kahn test, it will be done at his request. Both tests will be performed upon the request of the physician in those cases where there is some doubt as to the existence of the disease. It is urged upon the physician to limit his request to only one of these tests, as his preference may indicate in his routine examination of patients.

Since both tests cannot be offered routinely on all specimens, the above policy has been adopted in the hope that the laboratory will be able to comply with the preference of the physician relative to the Wassermann and Kahn tests rather than be compelled by the volume of specimens to abandon one test and offer only the other.

In cases of discrepancy between the two tests, questions similar to the following are often asked of the laboratory: Which is the superior test? On which report would you rely? Do you think this is a case of syphilis? Would treatment be advisable? Should treatment be discontinued?

It is thought that there is little choice in the two tests. It is conceded, however, that on the whole the Kahn test continues to show positive reactions longer than the Wassermann test on specimens from patients receiving treatment. The physician is in much better position to answer the other questions than the laboratory since he has, under examination and observation, the patient. Quite often a repetition of the tests will help dispel confusion.

E. L. WEBB, A.B., *Serologist.*

Why We Do It—An Elementary Discussion of Human Conduct and Related Physiology by Edward C. Mason, M.D. Contains 177 pages. Publishers: The C. V. Mosby Co., 3523-25 Pine Boulevard, St. Louis, Missouri. Price \$1.50.

NEWS ITEMS

THE STATE BOARD OF HEALTH held its annual meeting at the State Capitol, Atlanta, March 31st. The Board adopted resolutions in which it thanked Governor Rivers for his interest in public health and the increased appropriation for the Department of Public Health. Hon. Robert F. Maddox, Atlanta, was re-elected Chairman; Dr. Marvin M. Head, Zebulon, re-elected Vice-Chairman. Members present were: Dr. Cleveland Thompson, Millen; Dr. C. K. Sharp, Arlington; Mr. R. C. Ellis, Americus; Dr. Marvin M. Head, Zebulon; Mr. Robert F. Maddox, Atlanta; Dr. A. R. Rozar, Macon; Dr. Mather M. McCord, Rome; Dr. Henry W. Clements, Adel; Dr. L. C. Allen, Hoschton; Dr. Wm. A. Mulherin, Augusta; STATE OF GEORGIA AT LARGE — PHARMACEUTICAL ASSOCIATION, T. C. Marshall, Atlanta, and W. T. Edwards, Augusta; GEORGIA DENTAL ASSOCIATION, J. G. Williams, D.D.S., Atlanta, and Paul McGee, D.D.S., Waycross.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on March 31st. Guests and visitors were present from Atkinson, Bacon, Coffee, Irwin and Ware Counties. Dr. L. W. Pierce, Waycross, read a paper entitled, *Acute Gonorrhea*.

MEMBERS OF THE HABERSHAM COUNTY MEDICAL SOCIETY and Auxiliary were entertained in the home of Dr. and Mrs. W. H. Garrison, Clarkesville, on March 11th.

DR. V. H. BASSETT, Savannah, spoke before a meeting of the Savannah Historical Research Association in Savannah on March 24th on *Early Medical Practices in the Coastal Plains of Georgia, 1800 to 1850*.

DR. FRANK L. ESKRIDGE, Atlanta, addressed a meeting of the Grady Hospital Auxiliary on March 23rd.

DR. KENNETH McCULLOUGH, Waycross, spoke on *Cancer* at a meeting of the Waycross Kiwanis Club on March 26th.

DR. A. R. ROZAR, Macon, spoke on *Cancer Control* at a luncheon of the Macon Civitans' Club, March 26th.

DR. WILLIAM PERRIN NICOLSON, Atlanta, has been promoted to Colonel in the Medical Reserve Corps of the Fourth Corps Area of the United States Army.

DR. RICHARD BINION, Milledgeville, was elected President of the Surgical Association of the Atlanta and West Point Railroad, The Western Railway of Alabama, and the Georgia Railroad on March 30th. DR. R. H. FIKE, Atlanta, was elected Vice-President. DR. J. R. GARNER, Atlanta, is Chief Surgeon.

DR. D. S. REESE, Carrollton, returned recently from the Chicago Eye, Ear, Nose & Throat Hospital where he took post-graduate work for several weeks.

DR. CHAS. C. HARROLD, Macon, State Chairman of the American Society for the Control of Cancer,

spoke at a union meeting held at the First Baptist church, Macon, on *The Control of Cancer*, March 21st.

DR. FRANK K. BOLAND, Atlanta, delivered the annual Crawford W. Long Memorial Address at the University of Georgia, Athens, on the evening of March 30th.

DR. R. P. ADAMS, formerly of Winder, has moved to 262 Murray Hill Avenue, N. E., Atlanta. For many years he was a prominent physician and practiced at both Bethlehem and Winder.

DR. J. A. LEAPHART, Jesup, spoke on the Jesup School program on March 23rd. He gave an outline of the history of medicine and surgery during the past century.

DR. CLIFFORD RUTLAND, LaGrange, made x-ray examinations of the chests of school children at West Point on April 6th in the follow-up work for the diagnosis of tuberculosis.

DR. GEO. C. BROOKE, Canton, returned recently from New Orleans, La., where he took post-graduate study at Tulane University of Louisiana School of Medicine.

DR. N. M. OWENSBY, Atlanta, attended the Sixty-First Annual Convention of the American Association of Mental Hygiene held at Atlantic City, New Jersey, May 5th to 8th. He was on the program to discuss paper by DR. NEIL A. DAYTON, Boston, Mass., entitled *Height, Weight, Intelligence and Country of Origin in 38,249 Retarded Children in Massachusetts Public Schools, Examined by Traveling School Clinic*; also paper by DR. ELSIE H. MARTENS, Washington, D. C., entitled *Occupational Preparation for Subnormal Children*.

THE WARE COUNTY MEDICAL SOCIETY met at the Community Hall in Blackshear on April 7th. The scientific program was in charge of Dr. L. M. Hawkins. Dr. G. T. Hendry, Dr. L. H. Oden, Jr., Dr. T. E. Oden and Dr. Wm. P. Williams, all of Blackshear.

DR. MARION C. PRUITT, Atlanta, President of the American Proctologic Society, will deliver the Presidential Address at the Society's Thirty-Eighth Annual Meeting to be held in Atlantic City, New Jersey, June 6, 7, 8. He will speak on *Problems and Progress of the American Proctologic Society*. Dr. Pruitt will discuss paper by DR. W. W. GREEN, Toledo, Ohio, entitled *Oil Soluble Anesthetics in Ano-Rectal Surgery*.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on April 10th. DR. G. LOMBARD KELLY, Augusta, read a paper entitled *The Quantitative Study of the Friedman Test for Pregnancy*; DR. H. G. SHARPLEY, JR., Savannah, led the discussion. DR. S. ELLIOTT WILSON, Savannah, reported a case, *Severe Urethral Stricture with Operative Treatment*.

THE EIGHTH DISTRICT MEDICAL SOCIETY met at Camp Marion, Brunswick, on April 13th. The program consisted of Address by DR. B. H. MINCHEW,

Waycross, President of the Association; case report, *Myelogenous Leukemia*, DR. T. V. WILLIS, Brunswick; *A Study of the Acid-Base Ratio*, DR. JOHN W. DANIEL, Savannah; *Anesthesia*, DR. B. R. BUSSELL, Waycross; *Electrocardiography*, DR. F. G. ELDRIDGE, Valdosta; *Cancer as a Problem of Public Health*, DR. GERRY R. HOLDEN, Jacksonville, Florida.

THE STAFF MEETING OF GRADY HOSPITAL, Atlanta, was held on April 13th. DR. WM. WILLIS ANDERSON spoke on *Congenital Lung Cyst*; DR. RICHARD WILSON reported a case; DR. FRANK ESKRIDGE reported a case and exhibited autopsy specimens; DR. E. A. BANCKER, JR., and DR. L. P. MATTHEWS led the discussion.

DR. J. H. KITE, Chief Surgeon at the Scottish Rite Hospital, Decatur, spoke at the Staff meeting of the Atlanta Tuberculosis Association on *Bone and Joint Tuberculosis*, at the headquarters of the Association in Atlanta on March 25th.

DR. I. H. ETHERIDGE, Atlanta, was installed as Exalted Ruler of the Atlanta Elks' Lodge on April 1st.

DR. RICHARD WILSON and DR. PHILIP H. NIPPERT, both of Atlanta, were guest speakers at a Doctors' Day celebration and meeting of the Troup County Medical Society held at LaGrange on March 30th.

DR. R. V. MARTIN, DR. J. L. ELLIOTT and DR. J. T. BURKHALTER, all of Savannah, were speakers on the program for the Annual Early Diagnosis Campaign of the Chatham-Savannah Tuberculosis Association.

THE FULTON COUNTY MEDICAL SOCIETY met at the Academy of Medicine, Atlanta, April 15th. DR.

WARREN B. MATTHEWS made a Pathological Report; DR. GEO. A. WILLIAMS read a paper, *The Elliott Treatment as Prophylaxis for Gonorrhea in the Female*; MR. EARLE A. ROWELL, lecture, *Narcotics as Related to White Slavery, Prostitution and Medical Practice*.

DR. J. L. ELLIOTT, Savannah, Medical Director of the Chatham-Savannah Tuberculosis Association, will attend the annual meeting of the National Tuberculosis Association to be held at Milwaukee, Wisconsin, May 31-June 1.

DR. L. C. ALLEN, Hoschton, has been appointed on the Jackson County Welfare Board.

THE GEORGIA PUBLIC HEALTH ASSOCIATION met at the Atlanta Biltmore Hotel, Atlanta, April 22, 23, 24. Some of the speakers on the program were: Dr. J. P. Kennedy, Atlanta; Dr. H. C. Sauls, Atlanta; Dr. T. F. Abercrombie, Atlanta; Dr. J. E. Lester, Marietta; Dr. Thomas Phinizy, Augusta; Dr. B. H. Minchew, Waycross, President of the Association; Dr. H. C. Schenck, Atlanta; Dr. R. C. Shepard, LaFayette; Dr. T. H. D. Griffiths, Savannah; Dr. O. H. Cheek, Dublin; Dr. M. Hines Roberts, Atlanta; Dr. M. E. Groover, Quitman; Dr. S. Ross Brown, Atlanta; Dr.

J. D. Applewhite, Macon; Dr. G. T. Crozier, Valdosta; Dr. Hugh J. Bickerstaff, Columbus; Dr. W. W. Brown, Athens; Dr. V. H. Bassett, Savannah; Dr. W. D. Cagle, Gainesville; Dr. M. E. Winchester, Brunswick; Dr. C. D. Bowdoin, Atlanta; and Dr. T. F. Sellers, Atlanta.

DR. W. EARL QUILLIAN, Atlanta, spoke at the First Methodist Church, Decatur, on the *Creed of Civilians*. He is an International Past-President of the Civitan Clubs.

DR. J. L. ELLIOTT, Savannah, spoke before a meeting of the Charles Ellis School Parent-Teacher Association in Savannah, on *The Citizens' Responsibility in Fighting Disease*, April 12th.

DR. LAETUS SANDERS, Commerce, read a paper before the Jackson-Barrow Counties Medical Society at Jefferson on *Heart Disease*, April 12th.

DR. AND MRS. S. R. MITCHELL, Pineview, recently entertained the members of the Wilcox County Medical Society and Auxiliary in their home.

OBITUARY

Jefferson Davis, Toccoa; member; Emory University School of Medicine, Emory University, 1884; aged 71; died at his home, "Whispering Pines," near Toccoa on March 30, 1937. He gave the site for the Eastanolle Vocational School and served as Trustee of the School since its organization. Dr. Davis served one term as State Senator from the Thirty-First District in 1931-32. He was interested in textile manufacturing and served as President of the Georgia Cotton Manufacturers Association for a number of years. Until he retired a number of years ago, he was one of the prominent physicians of Stephens and adjoining counties. Surviving him are his widow; one sister, Mrs. W. P. Furr, Toccoa; and one brother, Robert Davis, Birmingham, Ala. Funeral services were conducted from the home by Rev. Scott Epps. Burial was in the churchyard of Martin Baptist church.

Dr. John W. Harper, Hampton; member; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1897; aged 62; died at his home on March 22, 1937. He practiced medicine in Jenkinsburg until he removed to Hampton ten years ago. Dr. Harper was a successful physician and was held in high esteem by many acquaintances. He was a member of the Henry County Medical Society and the Methodist church. Surviving him are his widow; two daughters, Mrs. Russell Shadburn and Mrs. Nelson Edwards, Hampton; two sons, J. B. Harper, Hapeville, and Frank A. Harper, Elizabethton, Tenn. Funeral services were conducted from the Hampton Methodist church. Interment was in the Stark cemetery near Jackson.

Dr. Marion J. Nicholson, Stephens; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; aged 75; died at his home on March 20, 1937. He was well known and had practiced medicine for almost a half century. Dr. Nicholson was charitable and a good citi-

zen. Surviving him are his widow; two daughters, Mrs. H. H. Patten, New Bern, N. C., and Mrs. Earl Norman, Washington; two sons, Dr. J. H. Nicholson, Atlanta, and J. R. Nicholson, Savannah.

Dr. Marion A. Born, Athens; Southern Medical College, Atlanta, 1891; aged 65; died suddenly at his residence on March 23, 1937. He practiced medicine at Lawrenceville for many years and his major work was directed at the treatment of cancer. Dr. Born was a prominent citizen. Surviving him are his widow; four daughters, Mrs. Charles Rothenburger and Mrs. Chas. Peacock, Baltimore, Md.; Miss Ruth Born, Athens; Miss Lorraine Born, New York City; two sons, Garland Born, Baltimore, and John Born, United States Navy. Burial was in the Athens cemetery.

Dr. Lewis J. Blanton, Atlanta; Emory University School of Medicine, Emory University, 1898; aged 76; died at a private hospital in Atlanta on April 4, 1937. He was a native of Cherokee County. Dr. Blanton practiced medicine in Atlanta until recently when his health failed. He was a member of the St. Mark's Methodist church. Surviving him are his widow; one daughter, Mrs. Clarence Blosser; one son, Lewis Vaughn Blanton. Funeral services were conducted from Spring Hill Chapel by Rev. Lester Rumble. Burial was in West View cemetery.

Dr. Willis J. Bryant, Summerville; member; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; aged 83; died at his home on April 5, 1937. He took a number of post-graduate courses in New York City, served for many years as Chattooga County physician, and had practiced in Chattooga and adjoining counties for more than fifty years. Dr. Bryant was honest and conscientious in all his work and dealings, courteous and considerate of every one even those in the most humble activities of life. He was truly an estimable gentleman and held in high esteem by all his acquaintances. He had been a member of the Chattooga County Medical Society and the Summerville Baptist church for many years. Surviving him are one sister, Miss Allie Bryant, Summerville; two nieces, Mrs. Anna Bolling and Mrs. Samuel Pollock; two nephews, E. A. and C. E. Lee, both of Chattanooga, Tenn. Funeral services were conducted from the Summerville Baptist church by Rev. J. C. Jackson. Burial was in Bethel cemetery near Summerville.

Dr. Ralph Freeman, Hoschton; member; University of Georgia School of Medicine, Augusta, 1909; aged 53; died suddenly at his home on April 13, 1937. He practiced medicine at Dacula for a number of years before he moved to Hoschton and in recent years limited his practice to obstetrics. Dr. Freeman was a member of the Jackson-Barrow Counties Medical Society, Woodmen of the World, Masons and the Baptist church. He was devoted to his work and family, and favorably known by his acquaintances and clientele as a most loyal gentleman. Surviving him are his widow;

two sons, Ralph Freeman, Jr., and Samuel Freeman; his mother, Mrs. J. B. Freeman, Dacula; three sisters, Mrs. S. S. Gowis, Decatur; Mrs. Hiram Hill and Mrs. Ola Riser; four brothers, Harry, Herbert, Jack and Lee Freeman, all of Dacula. Funeral services were conducted from the Hoschton Baptist church and interment was in the churchyard.

Dr. Charles Benjamin Almand, Winder; member; University of Georgia School of Medicine, Augusta, 1891; aged 67; died in a private hospital in Atlanta on April 16, 1937. He was born and reared in Elberton and received his early literary education there. After he received his degree in medicine, he began practice at Jug Tavern, the name was later changed to Winder, and practiced there for more than forty years. Dr. Almand had been a member of Jackson-Barrow Counties Medical Society for many years, also one of the most consistent and loyal members of the First Baptist church. He served for a number of years on the Winder Board of Education and Board of Health. Dr. Almand was public spirited and one of the State's best citizens. Surviving him are his widow; one brother, G. L. Almand, and one sister, Miss Ada Almand, both of Elberton. Funeral services were conducted from the Winder Baptist church. Burial was in the city cemetery.

Dr. George E. Youmans, Adrian; University of Georgia School of Medicine, Augusta, 1900; aged 61; died in the United States Veterans' Administration Facility, Augusta, on April 9, 1937. He was born and reared near Swainsboro. Dr. Youmans was identified with all progressive civic activities of his community; was a member of the Board of Trustees of the Adrian Methodist church and had been an active member of the church for many years. Surviving him are his widow and two sons, Brooks Youmans, Macon, and Rufus Youmans, Adrian. Funeral services were conducted by Rev. O. C. Cooper of Byron. Burial was in the city cemetery of Dublin.

COUNTIES REPORTING FOR 1937

Sumter County Medical Society

The Sumter County Medical Society announces the following officers for 1937:

President—R. C. Pendergrass, Americus.
Vice-President—L. S. Boyette, Ellaville.
Secretary-Treasurer—J. R. Lavender, Americus.
Delegate—A. C. Primrose, Americus.
Alternate Delegate—Arch Avary, Jr., Ellaville.

Muscogee County Medical Society

The Muscogee County Medical Society announces the following officers for 1937:

President—G. S. Murray, Columbus.
Secretary-Treasurer—J. H. Gaston, Columbus.
Delegate—W. P. Jordan, Columbus.
Alternate Delegate—G. J. Dillard, Columbus.

Morgan County Medical Society

The Morgan County Medical Society announces the following officers for 1937:

President—W. M. Fambrough, Bostwick.
Vice-President—D. M. Carter, Madison.
Secretary-Treasurer—W. C. McGeary, Madison.
Delegate—D. M. Carter, Madison.
Alternate Delegate—J. L. Porter, Rutledge.

Ware County Medical Society

The Ware County Medical Society announces the following officers for 1937:

President—W. L. Pomeroy, Waycross.
Vice-President—H. A. Seaman, Waycross.
Secretary-Treasurer—Kenneth McCullough, Waycross.
Delegate—W. F. Reavis, Waycross.
Alternate Delegate—C. A. Witmer, Waycross.

BOOK REVIEWS

Live Long and Be Happy, by Lewellys F. Barker. D. Appleton-Century Co., New York.

Dr. Barker, an outstanding figure in American medicine, has written a book for the use of the intelligent layman who wishes to prolong his life. While the average span of life has been increased greatly in the past forty years, still greater gains can be made by education along the lines of hygiene and preventive medicine. This book is written in a simple, understandable manner, and yet in a style so entertaining that doctor and layman alike can read it with enjoyment and interest. He ends with the plea that the reader subject himself to the benefits of periodic health examinations. Books like this deserve a wide popularity and should prove a happy substitute for the old "Doctor Book" of former times.

C. M. WEST, M.D.

Applied Dietetics, by Sanford Blum. 408 pages. F. A. Davis Company, Philadelphia, 1936.

Dr. Blum offers a concise book which should appeal to the physician rather than to the dietitian. Sample menus are supplemented by general principles for each diet, and wherever indicated a detailed schedule is supplied. The alphabetical listing of diseases at the top of each page is time-saving. In addition to the general index there is an index of foods, but throughout the book the approach is strictly clinical and the reader is spared cumbersome technical data.

The chapter on "Dietetic Fads and Fallacies" was read with much pleasure, and the author's comments on "Indigestible Foods and Combinations" are apt and his viewpoint extremely practical.

McCLAREN JOHNSON, M.D.

Keeping Your Child Normal, by Bernard Sachs, M.D. (price \$1.50).

A very conservative book of 135 pages on child guidance, with a common sense slant on psychology, psychoanalysis and the Freudian sex theories.

It is well worth the price asked, especially to pedia-

tricians, but also to any physician dealing in child behavior, or even to some mothers who have a psychological slant.

SAMUEL W. PERRY, M.D.

"BENZEDRINE SULFATE" IN CHRONIC EXHAUSTION

Nathanson (J.A.M.A., 108:531, Feb. 13, 1937) studied "Benzedrine" (beta-aminopropylbenzene—benzyl methyl carbinamine) in 40 patients complaining of chronic exhaustion. It was administered also to 55 normals, who answered a detailed questionnaire as to the effects of the drug.

Small doses (20 mg. given in divided doses during the morning) gave satisfactory results in a high percentage of cases. Some unpleasant side reactions were reported such as dryness of the mouth, loss of appetite with consequent loss of weight, sweating and disturbed sleep, but these were relatively infrequent.

Favorable results included a sense of well being, increased mental efficiency and energy coupled with a greater capacity for work.

Of the twenty-five subjects who were given lactose tablets as controls, 84 per cent reported no reaction of any kind.

Allen, Wilbur and McLean (Proc. Cent. Soc. Clin. Res., Nov. 6, 1936) also report 80 per cent improvement of symptoms in 95 cases suffering from melancholia, chronic fatigue or exhaustion.

SUMMER DIARRHEA IN BABIES

Cascec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Cascec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextrin-Maltose may safely be added to the formula and the Cascec gradually eliminated. Three to six teaspoonfuls of a thin paste of Cascec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

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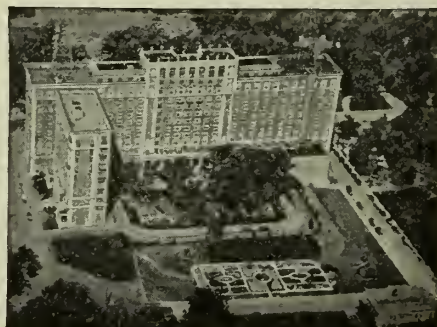
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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., June, 1937

Number 6

THE RESPONSIBILITY OF THE LAYMAN IN A PUBLIC HEALTH PROGRAM*

B. H. MINCHEW, M.D.
Waycross

The physicians of Georgia are definitely confronted with the task of convincing the layman of his responsibility in a public health program. We have heretofore assumed the leadership in all matters relating to health and in doing so have neglected, or rather failed, to enlist the support of the average layman in one of the most vital problems confronting him as a citizen.

In defining public health I would not have you in doubt as to what is meant. It is well known that a great group of our people cannot care for themselves in any period of adversity. When sickness appears they have been accustomed to depend upon the willingness of the physician to meet the situation as one burden of the community which he has assumed since the beginning of time. There are types of disease, the preventable and controllable, which afflict those who are able to care for themselves, but can be prevented and controlled only under an orderly and organized method. It is, then, that group of helpless persons afflicted with any type of disease, and diseases which are preventable and controllable in all types of persons, whom we think of as coming under the definition of a public health problem.

A successful health program depends so much upon the cooperation of social, business and political bodies that no group can assume the entire responsibility, or leadership, for its success. No matter how much interest the clubs and welfare organizations of a community manifest in a program of this nature they cannot perform the whole

duty relating to its solution. Too frequently organizations of this kind will try to act through committees, sometimes poorly appointed and without funds or resources to carry their ideas or conclusions into effect. Likely, too, each organization serving in this beneficent capacity will have different opinions of how their interests may be correlated, each thinking his own way the best. When all is done, little actual results can be noted.

Business groups may be fully aware of the prevailing effects of an epidemic in the community, and the same interest might be manifested by the social clubs and organizations just mentioned, but, because of poor cooperation, the same ineffectual results are obtained. We might have certain communities scattered throughout one section of the State definitely progressive in their thoughts toward public health, and yet, if it is an incomplete program which covers only the potential trade territory or political sub-division of the State, then the program is void of lasting results. Our social and economic life is too compact to enable us to neglect one group and save another. Any health program in the South which does not include the Negro race and the diseases incident to their racial environment, is incomplete and serves only to invite failure as an experiment in economic folly and to incite again the once common idea that we could permit them to serve us in the many capacities they do so well, and avoid the many diseases prevalent among them to which we too are susceptible.

It is not difficult to enlist the interest of our people in a conservation program of any nature which obviously affects their income and business success. We have definite proof of this in small political sub-divisions or sections which are definitely interested in the conservation of timber or plant life. Other groups may be interested in the conservation of minerals; another in farm products; still

*Presidential address before the Eighty-Eighth Annual Session of the Medical Association of Georgia, Macon, May 13, 1937.

others may want to conserve their parks and places of beauty. As a whole, the entire State is interested in the conservation of its natural resources. As evidence of this interest fifty thousand dollars more were spent by the State last year for the conservation of fish and game than was appropriated to the Department of Public Health for the conservation of those human and spiritual values we have in the present generation of our boys and girls. We have permitted public health to occupy the lowest scale in our conservation program.

It is difficult to understand that the business man has not been made acquainted with the inevitable cost of disease to him in the development and protection of his business, and yet the preventable and controllable diseases, epidemics and chronic conditions arising from disease, have placed a definite cost upon him, and in some instances forced liquidation of his business, or even bankruptcy. Much of our social and economic problems have failed because we have not had the strong and vigorous leadership which business ability and resourcefulness develop in our laymen, and as long as we permit this group of our people to free themselves from the responsibility of our public health programs, so long will our social and economic order suffer from lack of their support.

It should not be difficult to understand that the tenant farmer in any community is seldom prepared to meet any cost beyond that of absolute sustenance of himself and family, and it is equally true of the industrial worker. These two groups form a large portion of our population. When sickness shows its malicious form in some member of their families they are not prepared to bear the cost, and by that process of placing the inevitable cost upon the survival of the fittest, it finds itself taking toll from many persons between the unfortunate family and the banker, or the business man who extends credit, in the city or town nearby. So it is that few business men escape sharing the cost of the other man's misfortune in illness and, too frequently, death.

We must think, too, that this burden has been borne at a greater cost than an organized preventive effort would place upon any person, or group of persons, creating the remedy. Many of the business failures in the past ten

years have definitely arisen from an unhealthy condition in communities which have permitted preventable diseases from being corrected. We cannot place an estimate upon the cost of permitting an unhealthy condition to go untreated in a community. It not only places its burden upon those immediately affected in the present generation, but it creates an unhealthy cycle in succeeding generations because of the inheritance of unhealthy bodies and physical weakness arising from parenthood coming entirely from the same social environment in which they live.

All of this is said in the thought that the average business man does not have time to realize the truth, so apparent to the physician whose daily life carries him in the atmosphere and conditions here described. It has not been difficult this year for us to interest a large group of business men in Georgia in the discussion of our health program as an economic aid to the problems of business recovery. I am happy to state that we were aided greatly, and gladly, by that fine layman who occupies the important place as chairman of our State Board of Health. I speak of the Hon. Robert F. Maddox of Atlanta.

It is recognized that we must depend upon the officers of our counties, districts and State to bring about the changes which will be required through any organized effort to prevent disease. We have now between forty and fifty counties organized in a definite health program, either as units or combinations of counties under the Ellis Health Law, or some other form of health activity. But, to make the program complete, we must have the entire State organized into a complete unit; so, as stated, we must depend upon those who represent us in county or State affairs to create the legislation, as well as make available the funds, to put such an organization into operation. Fortunately our chief executive, Gov. E. D. Rivers, is in complete sympathy with the thought and desire of the membership of the MEDICAL ASSOCIATION OF GEORGIA toward this program, and, as a result, a most generous appropriation has been made to the State Department of Public Health, more than ever before in the history of this department. We are looking forward to a program which will accomplish a great deal during the period of his administration.

If we could have the assurance that we would have the same support with succeeding State administrations, then all would be well; but this cannot be assured and it is in this respect that the layman must assist in creating sentiment in a public health program.

I do not mean to discount the influence of the family doctor. While our lives have been far apart from that which creates some political methods, each of us practice medicine for hundreds and thousands of our citizens and we must continue our efforts in their behalf.

It requires the interest of the business man, the man who pays the taxes, to secure the results, and until the business men exert this influence, the minds of those who enact laws will not be in sympathy with the measures which require tax revenue for successful accomplishment. Our ambitions with regard to a health program will not succeed unless we interest the layman in its success, and we must not permit him to be afraid of the increased appropriation of this administration to support measures which benefit the underprivileged people of our State as much as do the Department of Public Health and our Cancer Commission. We must support the present effort of this administration toward the benefits we have been seeking through every executive since the MEDICAL ASSOCIATION OF GEORGIA was founded, and we must realize that the greatest aid that can be given this program is by interesting the layman in his responsibility to those less fortunate than himself when they are afflicted with disease which will be controlled by organized effort.

When we have developed one or two generations of healthy boys and girls, many of our social and economic problems will have been solved. We will spend less money in the organization which has to do with caring for the moral delinquents; we will have the satisfaction of seeing a new social order prevail, and the unlawful acts of the diseased body and mind will not inflict their burdens so heavily upon our economic and social life.

One would not have to be a prophet to predict that within a decade that our State will begin to enjoy an industrial development of which we have heretofore been deprived. We are compelled to realize the important

part public health will bear in the development of the South as an industrial area. It is not necessary to inspire laymen to say that we would expand to the point of the East and North as an industrial area, but we would certainly see that barrier removed which has hindered this development heretofore and observe a new day on our industrial horizon. Our climate is particularly fitted for improved living conditions of the wage earner over that of the East and North. Our people are more loyal as employes and in every contact which has to do with making them valuable citizens, than many of those who are causing strife and turmoil in the industrial centers in the East and North at this time. It occurs to me that the man who has capital to invest would be attracted to this wonderful section of ours with its capable people, all speaking one language, and whose loyalty to this section and environment is so well established, that improvement could be anticipated in the relationship of capital and labor and more profitable investments enjoyed where relocation of plants are made in such an environment.

While the lay mind is not void of sentiment with regard to this question, still we must appeal to the economic aspect of any activity which requires taxation—new revenues; and we must convince them that a healthy situation can be bought in every community and that it is good business to buy it. To permit an unhealthy condition costs a great deal more than to correct it, and we cannot enjoy the potential possibilities of our delightful climate, the character of our people, or the industrial development of our section, until we have corrected this problem.

Finally, I would have you think again of our responsibility in any health program. THE MEDICAL ASSOCIATION OF GEORGIA has always stood for those things which are for the benefit of all the people. We must continue our efforts, but we must obtain a better understanding with our citizens to the end that all will be served. The physician gives his life and his services to humanity in such a program and his happiness comes, not in knowing the methods by which it is obtained, but in the joy which is given to those who need and receive it.

THE PROBLEM OF ADENOMA OF THE THYROID

J. GASTON GAY, M.D.

Atlanta

The advances in recognition and treatment of hyperthyroidism in the last twenty years constitute a record of achievement as brilliant as our age can boast of, but in our enthusiasm over the study and treatment of exophthalmic goiter we have failed to give proper consideration to the more insidious and more dangerous adenomatous goiter.

The early history of these two conditions can hardly be unraveled. Parry, in 1786, first described exophthalmic goiter, although he attributed the syndrome to disease of the heart. Graves, in 1835, and Basedow, in 1840, gave less accurate descriptions of three cases and presented excellent clinical papers on the subject. Both, however, fell into the same error of attributing it to heart disease. It was one hundred years after Parry's first observation that Moebius definitely ascribed the disease to abnormality of the thyroid gland. Greenfield, in 1893, demonstrated the specific pathologic changes of exophthalmic goiter, namely, hypertrophy and hyperplasia. It was from this point that exophthalmic goiter began to be distinguished from hyperfunctioning adenomatous goiter.

Plummer first, in 1911, definitely divided the hyperthyroid state into hyperfunctioning adenomatous goiter and true exophthalmic goiter with hypertrophy and hyperplasia of the parenchyma. On Kendall's discovery of thyroxin as the active principle of the thyroid, he theorized that, in exophthalmic goiter the gland puts out a toxic product similar to thyroxin but unsaturated with iodine, in addition to an increased amount of thyroxin, but that there is only an increase of the normal product in hyperfunctioning adenomatous goiter. The next step was DuBois' determination of the variation in the basal rate in goiter. Plummer later gave us this simple classification:

1. Exophthalmic goiter, hypertrophy and hyperplasia.
2. Adenomatous goiter, either single or multiple, with or without hyperfunction.

3. An intermediate group which shows besides the adenoma, areas of hypertrophy and hyperplasia typical of exophthalmic goiter.

Etiology

The origin and etiology of adenomas of the thyroid is still a matter of question. A thyroid adenoma has been described as an encapsulated tumor containing vesicles and cells of the same character which make up the normal gland, but with definite evidence of new cell formation either past or present.

Wolfler, in 1883, described what he considered as cell rests in the interstitial tissue of the thyroid and for a very long period of time it was considered that fetal adenomas arose from this source. Rienhoff, in 1926, from serial sections of entire thyroid glands which he later reconstructed from paraffin sections, found no rests of this type and came to the conclusion that no such theory was tenable. From his work on involution and regression of the thyroid after the use of iodine, in which numerous nodular areas were found that resembled adenomas both clinically and histologically except for new cell formation, he concluded that in a great many cases these so-called adenomatous areas were produced through the use of iodine.

Himmelberger and Whatin, on the other hand, claim that in infant thyroids we always find small areas of lymphoid infiltration which later become encapsulated and probably these areas constitute the source of Rienhoff's so-called adenomas.

Cole, Womack, et al, from their work on experimentally produced infections and injections of the purine base radicals in certain drugs claim to have produced adenomatous nodules. From the diversity of opinion expressed, it can readily be seen that this subject is still open for discussion but, due to diverse appearance of these tumors, all of these theories may contain a modicum of truth.

Symptomatology

It has been my experience in both private practice and at the Good Samaritan Clinic that the salient point in the symptomatology of adenomatous goiter is the relative lack of symptoms in the early stages, in contrast to the large percentage with marked visceral changes in the later stages. I am sure that we have all been told many times, "Why, Doc-



FIG. 1

Typical hyperfunctioning adenoma in a woman of 48. Tumor first noticed 9 years previously, with gradual increase in size. Toxic symptoms had been present for 2-3 years.
B. M. R. plus 37.

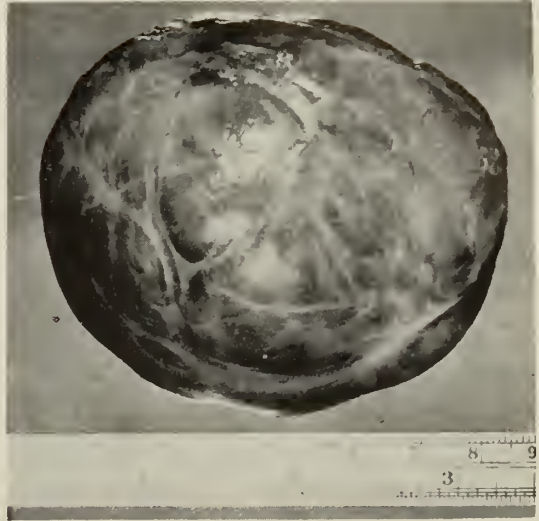


FIG. 2

Tumor removed from patient in Figure 1. Pathologic diagnosis. Cystic adenoma of the thyroid.

tor, aside from the looks of it, I have no trouble at all." It is at this point that frequently we fail in not convincing the patient of the insidious nature of his disease. A bit later pressure due to the tumor and a mild nervous instability cause the patient some inconvenience.

In my group which closely parallels larger ones from the clinics of the Mayos, Lahey and Crile, the average age of the patients with beginning mild hyperthyroidism and moderate visceral changes was 45 years. The age of marked hyperthyroidism, with marked visceral changes was 47 years. The duration of the goiter averaged 15 years. The duration of symptoms was from two to three years. In comparison, cases of exophthalmic goiter have had symptoms of from one to one and a half years. The significant point is that adenomas do not produce hyperthyroidism for an average period of 15 years, but the visceral changes are gradually taking place during these fifteen years which bring the patient to an age where the operative risk is greater.

The typical symptoms of true hyperfunctioning adenoma are characteristically different from those of true exophthalmic goiter: for two or three years previous to examination the patient gradually notices a change in general health. He becomes more excitable at times. He has probably more enthusiasm for work but tires out quicker. He has a good appetite but it is not markedly increased. He thinks he should be gaining weight but finds a moderate decrease instead of an increase. He begins to notice some shortness of breath and palpitation on exertion and may also have some hypertension. In older or more severe cases there is evidence of heart failure with irregularity and edema. The patient is characteristically quieter, does not have the marked tremor, purposeless movements, the general urge and pep that the exophthalmic does. Gastro-intestinal crises, exophthalmos, thrills, bruits and heat changes are usually absent. The basal rate varies markedly but as a general rule is not so high as in exophthalmic goiter. In all the picture is more one of visceral degeneration rather than of acute toxemia.

Thirdly, there is adenocarcinoma of the thyroid. Although cancer occurs in young people, the patient is usually elderly with a history of a goiter of many years' duration. The gland is hard and frequently fixed and nodular. There may or may not be cachexia, loss of weight and general weakness, and

final diagnosis cannot be made until operation.

In summing up statistics, Dr. C. H. Mayo states that 60 per cent of adenomatous goiter become hyperfunctioning at some period during the course, 5 per cent develop carcinoma in the gland and the remaining 35 per cent show either pressure symptoms or none at all.

Differential Diagnosis of Borderline Groups of Adenomas

In seeing a large number of cases of suspected goiter, the surgeon soon finds that his diagnostic acumen is not so much taxed by the frank cases of simple adenomas with or without hyperthyroidism or carcinomatous changes, as by a group of borderline cases. For my own convenience in differentiating these, I have divided them into the following groups:

1. Simple colloid goiter with suspected multiple adenomas. These cases may occur at any age but are usually seen in the early decades of life. The patient generally shows a simple symmetrical enlargement of the thyroid with no signs of hyperthyroidism and no increase in the basal rate. The gland on palpation seems distended and firm but no nodules or discrete tumors can be distinguished. A diagnosis of simple colloid goiter is usually made when such a patient is first seen, but by placing him on one grain of thyroid extract daily, the excess colloid in the gland is removed and in about 40 per cent of cases there will be found multiple nodules or a single discrete nodule in one or both lobes. In this way frequently adenomas can be made evident at an early age which might not otherwise have been detected until years later.

2. In the second group, the patient as a general rule comes in complaining of choking sensation on swallowing. These patients in most cases have a thin, very long neck, a very prominent thyroid cartilage and trachea and have been frequently diagnosed previously as chronic nervous exhaustion or hysteria. They are usually of a rather nervous temperament and have many hypochondriacal symptoms. The thyroid is high up on the trachea, small, adherent, is frequently hard and slightly nodular. At first I felt that these cases were probably hysterical types and that operation was not indicated, but in recent years I have

operated on five with good results. In three cases relatively large retrotracheal adenomas were found, which gave no other symptoms of retrotracheal goiter and could not be palpated, but removal gave complete relief. In the other two cases, a tightly adherent fibrotic gland almost surrounding the trachea with small nodular areas in the isthmus was found. The isthmus and part of each lobe were removed and the patients have remained free from the choking sensation. In explanation, I feel that they represent a group in which compression or distortion of the trachea was taking place. This tracheal insult may be in the form of lateral displacement by a single adenoma or of constriction from the wedging effect of a bilateral enlargement and it may be anteroposterior deformity from a retrotracheal goiter. My attempts to rule out borderline deviation or compression of the trachea by x-ray have not been very successful but such attempts should always be made.

W. A. Plummer has described as *pathognomonic* a slight stridor with a somewhat hollow tone elicited when the patient inspires quickly and deeply with the mouth open.

Great care should be taken in selecting these cases for operation and every precaution observed in excluding globus hystericus and similar conditions before resorting to surgery. Under this group will also come the more frequently seen substernal and intrathoracic goiters.

3. The next group can be divided into two, namely, (a) those cases in which there are clinical signs of hyperfunction but in which the basal rate remains consistently low or within normal limits. This may occur not only with the discrete adenoma in which the problem is simple since the tumor should be removed anyway, but also in the borderline cases with indefinite multiple nodules. My feeling is that this condition is probably true beginning hyperfunction and that it is better to rely on clinical findings than on the basal rate, and that these patients work ordinarily on a lower output of thyroxin than the normal. (b) Conversely, we also see cases of adenomatous goiter in which the basal rate is persistently increased with all the other symptoms of a hyperfunctioning gland except that the pulse rate and blood pressure are

normal. If we can rule out other conditions causing an increase in basal rate, I feel that these are cases of hyperfunctioning adenomatous goiter and that they should be watched carefully and every diagnostic means used before operation is undertaken.

4. Lastly, we have a group of children between the ages of five and ten years in which we see enlargements of the gland, usually in the isthmus, simulating adenomas in every way. They are brought in by their parents who complain that the child is nervous, and has a goiter. The symptoms of hyperfunction are absent but a careful history will elicit a long train of upper respiratory infections with enlargement of the anterior and posterior cervical nodes. These infections, I believe, explain the thyroid enlargement as well as the cervical adenitis, and, if we follow the work of Womack and Cole, may become adenomas in later life. I have been content merely to watch thirty of these youngsters over a period of about four years. Iodine given at intervals seems to have no effect and the tumor remains of about the same size and consistency. Whether the masses will disappear or remain as true adenomas at puberty remains to be seen. This group should not be confused with exophthalmic goiter which does occur in childhood and should be excised.

Treatment

Since the earliest recognition that the syndrome of hyperfunctioning adenoma and exophthalmic goiter was associated with excessive activity of the thyroid gland, the most successful method of combating the condition has consisted in operative measures, designed to reduce the activity of the gland. Beneficial effects of operation were first observed when Tillaux, in 1880, and Mikulicz, in 1886, performed partial thyroidectomy. There was then a definite lag in the progress of surgery for this condition due to the extremely high mortality rate. It was not until 1922, with the introduction of iodine by Plummer, and a better understanding of the disease, with our present methods of selective diagnosis and of preoperative and postoperative treatment that thyroid surgery has come into its own. The hazards of operation for adenomatous goiter with hyperthyroidism are for the most part dependent on the presence of visceral degeneration, the result of hyperthyroidism

commonly mild but of long duration. It is evident, therefore, that early operation, before these changes have taken place, would rob the operation of its main hazards. Early operation is also essential to forestall carcinoma. During the past twenty years the education of the public and the medical profession as to early removal of adenomatous tumors has brought about a gratifying drop from a maximum of around 5.8 per cent to a minimum of 0.83 per cent. In a series of approximately 100 cases since I have been in Atlanta my mortality rate has been zero. This is hardly a fit comparison with the groups of thousands of cases, but should be the goal to which we should strive.

Simple discrete adenomas and uncomplicated hyperfunctioning adenomas constitute a purely surgical problem. Aside from a few days to a week's rest, exclusion of all respiratory infections and the usual routine measures to reduce the clotting time, coupled with a high vitamin diet and general upbuilding of the patient, they need very little care. But in as much as about one-third of exophthalmic goiters occur with adenomas, obviously iodine should be administered before operation in cases of adenomatous goiter when an associated exophthalmic goiter cannot be excluded. I feel, however, that iodine will not abolish the features of the disease resulting from the presence of excessive secretions of the normal product of the thyroid gland. Therefore, in hyperfunctioning adenomas, iodine may be used as a selective diagnostic agent to rule out exophthalmic goiter. If the basal rate does not drop and the pulse decrease within a week, iodine is discontinued and the patient allowed to rest for a week to ten days before operation. The reason for this is that I feel that those patients receiving iodine have a rather marked tendency to bleed during operation and are prone to hemorrhage following.

In those cases associated with exophthalmic goiter where iodine is found to be of value, it is essential that an adequate dosage be given over a sufficiently long period of time to secure the maximum degree of clinical improvement. Thirty minims daily usually suffices. Improvement in the patient's condition generally takes place in three to four days and maximum improvement in

seven to ten days.

Nonspecific measures are most important. The caloric requirement of these patients is much above normal and therefore it is necessary to see that they have an adequate amount of fluids and nourishment. The use of the barbiturates is of the greatest aid in securing rest and in allaying preoperative apprehension. Unless cardiac decompensation is present the patients are not strictly confined to bed because they lose strength and are prone to pulmonary complications. They are allowed therefore to be up and about part of the day, say three to four hours, at least several days prior to operation.

Complicated Cases

Let me begin the discussion of complicated cases by warning against unnecessary surgery in cases of adenomatous goiter either with or without hyperthyroidism. So simple a procedure as tonsillectomy may precipitate a fatal crisis.

In those cases in which there is marked myocardial degeneration, associated with auricular fibrillation or flutter and congestive heart failure, we find probably our greatest problem. It is doubtful whether auricular fibrillation or flutter alone greatly increases the surgical risk and they can usually be disregarded from the standpoint of operation. Care of congestive heart failure, on the other hand, is more of a problem. These patients are confined to bed until they are free from edema, then gradually allowed to be up and about previous to operation. Iodine has been found to restore compensation in the majority more quickly than digitalis. Salyrgan is also of great value in getting rid of edema.

Postoperative Care

Uncomplicated simple adenomas and hyperfunctioning adenomas need very little in the way of postoperative care. Fowler's position relieves all strain on the neck, facilitates the disposal of secretions in the throat and lessens the tendency to cardiac and pulmonary complications. The patients are usually allowed to be up on the fifth day and are frequently back at the office on the tenth day.

In greatly debilitated patients, cyanosis, pulmonary edema and pneumonia are not uncommon. For this group oxygen treatment offers much.

Summary

More accurate diagnosis and early removal of simple adenomas cannot be emphasized too strongly. In this way we will materially reduce the operative mortality and prevent cardiac complications, as well as cancer of the thyroid. Great advances in preoperative treatment, operative technic and postoperative care have been made. These factors constitute the greatest advances of the last twenty years.

I feel that too much reliance is being placed on one basal test and our interpretation of basal readings. In every case, before a diagnosis of hyperfunction is made, the basal rate should be repeated frequently and more reliance placed on clinical symptoms rather than on laboratory methods.

On the other hand, the numerous borderline cases show us that there are still many phases of thyroid disturbance not yet well understood. Lastly, the group of children in which we are noting enlargements opens a large field for study.

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H. R. DRYSDALE, Rochester, N. Y. (*Journal A. M. A.*, April 10, 1937). is satisfactorily controlling ten juvenile cases of diabetes with protamine insulin, all insulin being given before breakfast. Marked subjective improvement has been the rule in all cases. Hypoglycemic reactions with protamine insulin, while comparatively rare, may be insidious in onset and very severe. No local subcutaneous reactions have been observed from massive doses of protamine insulin injected at a single site. Protamine insulin seems to prevent diabetic acidosis in infections, although profuse glycosuria may be present. There is some evidence that protamine insulin may tend to raise the renal threshold in certain cases. Protamine insulin is highly efficacious when used in cases of "insulin wasters."

OBSTRUCTIVE LESIONS OF THE URINARY TRACT

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Obstructive lesions of the urinary tract, or obstructive uropathy, play an important role in the production of urinary tract diseases. The anatomy of the urinary tract is constructed to form a continuous passage, interrupted in parts by sphincter-like valves and with the component parts varying in size, width, length, etc. It is constructed so as to predispose to the formation of various pathologic obstructions which naturally interfere with its normal physiologic function. In order to understand this condition more thoroughly, some remarks concerning physiology of urination and the pathologic changes in the tract will be helpful.

In the normal individual the urine passes down through the ureter from the kidney as a result of peristaltic waves which originate in the musculature of the pelvis and extend to the ureterovesical orifice. Under cystoscopic examination urine is seen ejected into the bladder every fourteen to thirty-eight seconds. The two ureters may contract at different times and at different rates and are independent of bladder contractions. As the quantity of urine increases, the rate and vigor of contraction increases. The renal pelvis contracts more rapidly than the ureter and acts as the pacemaker. Observers have reported that when the intravesical pressure rises above a certain point, the ureters cease discharging urine into the bladder. Obstruction to the ureteral flow causes increased peristalsis and muscular hypertrophy, followed later by dilatation and, finally, by cessation of peristalsis. Since the peristaltic waves always travel in a downward direction, any point of irritation, whether it be a stone, stricture, or other pathologic obstruction, may interrupt the wave, in which case independent waves may arise below the point of obstruction. Animal experiments have shown that when this takes place, violent irregular and reverse peristaltic motions take place above the block. Oconor, Wislocki and others believe that such reverse waves occur in renal colic due to the increased pelvic pressure. This also explains

the radiation of renal pain so well known to us. When the obstruction is removed, even though the ureters are dilated, structural restoration will follow, provided the kidneys are secreting properly. I have seen numerous patients whose calices and ureters, although previously dilated and verified by pyelograms, returned to normal following the relief of the obstruction.

One must remember that in ureteral obstruction the pressure effect will develop rapidly. However, the renal function on the affected side may not be interfered with for a time, since the opposite kidney will compensate and take care of the excretion of nitrogenous products. If the obstruction is partial or incomplete, e. g., a stricture or a slow growing tumor pressing on the ureter, hydronephrosis will develop and at times assumes an enormous size. Complete blockage of the ureter by a stone will occasionally result in atrophy and fibrosis of the kidney, a condition sometimes called autonephrectomy. If the obstruction is allowed to continue, what else might we expect?

I have mentioned hydronephrosis but more serious complications may follow, e. g., pyelonephritis, or chronic diffuse nephritis which may be present in varying degree. The calices and pelvis will gradually begin to dilate and there will occur obliteration of the cupping due to protrusion into the calix of the tip of the pyramid, the former later becoming globular. Foramina connecting the calices and renal pelvis also become dilated and ecchymosis occurs beneath the mucosa of the pelvis, one of the sources of hematuria. Within the kidney the collecting tubules dilate, followed later by dilatation of all the tubules. The capillary plexus surrounding the tubules become compressed and occluded, eventually reducing the circulation of the kidney to a few small vessels. The glomeruli show a generalized fibrosis. The tubular epithelium undergo degeneration and eventually the entire kidney undergoes fibrotic change. As a result of these changes the renal function is markedly lowered.

In intravesical obstruction the bladder wall undergoes hypertrophic change, the trigone being involved first. This is later followed by individual enlargement of the muscle bundles which become separated by depressions pro-

ducing the well known trabeculated bladder. Vesical irritability occurs and later, when the obstruction increases, the bladder is unable to empty itself completely due to diminished expulsive force. This gives rise to residual urine, followed by infection, formation of diverticulae, cellulites and dilatation of the ureters. As long as the bladder is able to empty itself normally, the valve-like arrangement of the urethrovesical orifice will function properly, permitting the kidney to discharge urine into the bladder between voidings. The bladder, therefore, serves to protect the kidneys from back pressure. When the bladder later fails to empty itself in spite of violent contractions, the intravesical pressure becomes abnormally elevated. When the pressure approaches the normal intraureteric pressure, the outflow of urine from the ureter is no longer free. The ureter then increases its contractions in order to protect the kidney. Eventually the ureter becomes dilated; the ureter, pelvis, and bladder becoming one communicating system. Dilatation of only part of the ureter is only a transitory stage prior to complete dilatation. A decompensated bladder interferes with the outflow of urine from the kidney, increasing the pelvic pressure to above normal. As a result the renal secretion is interfered with and later becomes insufficient. Even before hydronephrosis develops, renal function tests will show increased nitrogenous retention.

Obstruction in the urethra will result in dilatation. In chronic cases the wall may be so thinned as to cause spontaneous rupture, and is particularly present in old infected cases. The effects of back pressure resulting from urethral obstruction have already been brought to your attention.

It is very important to remember that obstructions may be multiple, in which case we are faced with a more serious problem, and we should use our best judgment to institute corrective measures and prevent complications. There may be present a renal calculus on one side and a ureteral calculus on the other; tuberculous stricture of both ureters, bilateral renal calculi, stricture of urethra and prostatic obstruction, bilateral nephroptosis, carcinoma affecting one kidney and a calculus in the other, etc. Other combinations of obstruction are occasionally seen and require tactful approach.

In reference to the symptomatology of urinary obstruction, I should like to emphasize a few interesting facts. Naturally the symptoms will depend upon the location of the obstruction, whether it be supravvesical or infravesical. If the obstruction is supravvesical, i. e., above the ureterovesical orifice, one kidney will be affected. If the obstruction is infravesical, at the prostate orifice or below it, both kidneys will be involved. If both sides of the upper urinary tract are obstructed, both kidneys will be affected. Hypertrophy of the sound kidney will always occur when the lesion is unilateral accompanied by hyperplasia of the epithelium and convoluted tubules. Patients with a diagnosis of chronic nephritis or Bright's disease may in reality be suffering from urinary obstruction notwithstanding the fact that in both conditions the secretory power of the kidneys is impaired. It is possible, however, to have Bright's disease along with urinary obstruction. Only a complete cystoscopic study will rule out this factor. An important point to remember is the fact that the affected kidney due to obstruction will return to its normal secretory power when the obstruction is removed, provided no permanent structural change has already occurred. If the individual is over forty-five, obstruction plays an important part.

I should like to mention a few common symptoms which occur in hydronephrosis, a condition due to many different types of obstruction. The principal symptoms are pain and tumor. If calculus or pyuria is present, hematuria may occur. Urgency, frequency, transient polyuria, nausea and vomiting are less common complaints. Hydronephrosis due to ureteral stone will give rise to a typical attack of ureteral colic. If the calculus is in the renal pelvis or ureteropelvic junction, the downward radiation of pain is not so frequent. In some instances the pain may be dull and constant, affecting chiefly the lumbar region. The hydronephrotic mass may vary in size from time to time and if infection supervenes the symptoms naturally become more complicated.

The well known symptoms of bladder obstruction, e. g., frequency, decrease in the size of the stream, later followed by retention, incontinence and dribbling occur often, and

complications, e. g., pyelitis and impairment of renal function should always be borne in mind.

The symptoms of urethral obstruction are sometimes difficult to distinguish from those of prostatic obstruction since the cardinal signs are small stream, difficulty in urination and dribbling after voiding. Examination of the urethra with bougies and sounds will differentiate the conditions.

For the past several years the field of urology has steadily gained progress. Research workers have made many advances and have helped to solve many obscure conditions which would have been difficult some years ago. Such examples are denervation of the adrenals, renal sympathectomy, the ketogenic diet, endocrine and metabolic influences upon the formation of renal calculi, improved methods in the treatment of malignancy and transurethral resection. The competent urologist is able to make a positive diagnosis of urinary tract disease and state definitely whether obstruction exists in the kidney, ureter, bladder or urethra. He can determine the character of the obstruction, whether it be a calculus or stricture, etc., and note the presence or absence of infection. He can, through accurate methods, determine the amount of damage resulting from the existing pathologic changes and can apply the correct procedure for the restoration of the particular organ involved. This is accomplished by a careful history and a complete cystoscopic examination which should include a careful examination of the urine, chemical, bacteriologic and microscopic examination, x-rays, retrograde and intravenous urography, functional renal test, stereoscopic pyelography, blood chemistry, cystograms, etc. Due to the simplicity of intravenous urography, many in the profession, exclusive of urologists, are resorting to this method as an aid to diagnosis. Nevertheless, it should be emphasized that a correct diagnosis from an intravenous skiodan plate is questionable and cannot always be relied upon; a cystoscopic study with ureteral catheters is essential. It must also be remembered that a negative x-ray study of the urinary tract does not exclude disease of the kidneys, ureters or bladder. Pyelographic studies should include pictures in the horizontal and upright positions to rule out movable kidney.

Both retrograde and intravenous pyelography have their place, although the intravenous method portrays better the physiologic appearance of the kidney, while the retrograde portrays anatomic pathologic changes.

A complete cystoscopic study having been made and the site of obstruction located, the urologist first endeavors to relieve the condition by conservative therapeutic measures before resorting to surgical intervention. The injurious effects on all portions of the genito-urinary tract, if treatment is neglected, have been emphasized. In most instances it is impossible to remove the obstruction at once. It is, therefore, imperative that we institute immediate drainage in order that the affected portion of the tract improves before instituting further corrective measures in removal of the obstruction. If the kidney is seriously damaged as a result of hydronephrosis, infection, etc., renal function will be restored to a certain point following the removal of obstruction. If the damage is slight, drainage of the kidney should restore the function completely. The phenolsulphonphthalein test is used to determine the capacity of renal elimination.

In some instances it is necessary to resort to surgical measures for the relief of the obstruction, which vary according to the site and character of the lesion, e. g., prostate obstruction, impacted calculi, abscesses, vesical diverticulae, congenital valves, bands, tumors, etc. A nephropexy may be necessary for angulations and kinks due to a ptosed kidney. In severe types of hydronephrosis, nephrectomy is indicated. A nephrolithotomy or pyelotomy may be necessary for removal of renal stone. Our main problem is, therefore, first: to remove the obstruction and attempt to restore the urinary organs to normal. Conservative measures should be tried in the beginning, particular attention being paid to the damaged kidneys by the employment of gradual decompression and the ingestion of large amounts of water. Infection is a serious problem and should require close observation.

The experienced urologist is able in almost every instance to pass an obstruction, thereby preventing serious complications. Later developments and therapeutic procedures depend upon the progress of the existing disease as I

have mentioned previously. Numerous instruments, catheters and bougies are introduced from time to time for the relief of the obstruction and with their proper application one can accomplish marvelous results. Among them may be mentioned the Stern-McCarthy resectoscope, Young punch, Caulk-Kackley visual prostatic punch, cystoscopic scissors and snares, numerous improved ureteral stone forceps, cystoscopic lithotrite, the Grayson-Carroll dilating ureterotome, the Howard-Dourmaskin and McKay ureteral stone extractor, ureteral meatotomy electrodes, various urethral catheters and bougies, including others too numerous to mention.

In conclusion, I should like to emphasize the fact that the most important advances in the field of urology have been made in the obstructive lesions of the urinary tract. The relative frequency of complications which would have been avoided had early corrective measures been instituted should impress every member of the profession. It is needless to say that the mortality rate in these cases has been markedly reduced.

406-7 Candler Bldg.

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OCCURRENCE OF DIPLOCOCCUS PNEUMONIAE IN INFECTIONS OF URINARY TRACT

H. D. MOOR and IDA LUCILLE BROWN, Oklahoma City (*Journal A. M. A.*, May 8, 1937), made cultures of the urine from 329 persons suffering from infections of the genito-urinary tract of which ninety-six cases (approximately 30 per cent) have been positive for a gram-positive lancet shaped diplococcus which by culture and serologic tests proved to be diplococcus pneumoniae. In twenty-seven of the cases they have typed the organism and found it to be type XIV, but it is highly probable that other types may be involved. The remaining sixty-nine cultures, while not typed, are definitely pneumococci, being bile soluble and fermenting inulin as well as giving the other typical cultural characteristics. Fifty-five controls proved negative for pneumococci. Autogenous vaccines have given encouraging results to date. Nine of the cases with which they worked gave positive cultures of the diplococcus from sources other than the urine; four from the blood and the urine and four from the teeth and the urine; one from paranephric abscess, blood and urine.

IMPORTANT AIDS TO THYROIDECTOMY

Report of Cases

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There is probably no surgical disease that requires such refinement of details as does the preoperative and postoperative treatment of thyroidectomy. The surgical mortality of hyperthyroidism has been greatly reduced since the introduction by Plummer, in 1922, of iodine as a preoperative measure.

The important preoperative measures in the treatment of hyperthyroidism should be mentioned since the preliminary treatment and the classification of patients as to their ability to withstand surgery is just as important as the operation itself. The method used by Goodwin and Smith in determining the patient's condition and ability to undergo surgery is very practical and their chart, reproduced here, indicates the factors considered in classifying hyperthyroid patients. This method has helped in determining whether or not a stage operation should be done. The following routine is employed while the patient is in the hospital for a preliminary period of preoperative treatment:

A high caloric diet of high carbohydrate and low protein is ordered, with $\frac{1}{2}$ grain of phenobarbital three times a day after meals, complete bed rest, Lugol's solution 10 minims three times a day, a sedative at bedtime and a basal metabolic reading every ten days. An electrocardiogram is required in cardiac cases.

Avertin as a basal anesthetic, supplemented with nitrous oxide gas has proved satisfactory. At the time of the operation an attempt is made to remove between 80 and 90 per cent of the thyroid tissue. Postoperative oozing and the accumulation of serum have been reduced by the use of silk ligatures. This procedure has also obviated the necessity of a drainage tube in the majority of cases. Three cases from my series are reported in detail because they represent three separate varieties of thyroid disease.

C. D. D., male, aged 59, was admitted to the hospital June 24, 1935, complaining of headache, short-

*Read before the Seventh District Medical Society, Calhoun, April 7, 1937.

ness of breath and pain in the abdomen and knees of three weeks' duration. Constipation had been present for years, but had increased during the present illness. In spite of a good appetite there had been a loss of weight of 25 pounds during his three weeks' illness. Digitalis had been used without relief of his dyspnea and large doses of analgesics had not relieved his headache and the pains in the abdomen and knees. His past history was insignificant.

The patient appeared acutely ill, was dyspneic and slightly cyanotic, had an anxious expression and walked with the aid of a cane. His height was 5 feet and 8 inches; weight 110 pounds. His temperature was 98°F., systolic blood pressure 160, diastolic 90, pulse rate 120 and regular. There was no exophthalmus and the thyroid gland was not palpable. The lungs were clear to percussion and auscultation. The heart was not enlarged and there were no murmurs. A roentgenogram revealed a sclerotic aorta, heart of normal size and clear lung fields except for a small amount of fluid at the right base. The physical examination was otherwise negative with the exception of a marked tremor of the fingers. The urinalysis and blood count were within normal limits and the blood Wassermann and Kahn tests were negative. The basal metabolic rate was plus 57 per cent.

The diagnosis of hyperthyroidism was made in spite of no exophthalmus and a non-palpable thyroid gland. The patient was placed on the routine preoperative hyperthyroid regime and two weeks later the B. M. R. had dropped from plus 57 to plus 46 and he had gained 5 pounds. His rating of 4 indicated that he was a poor operative risk. The use of Lugol's solution was discontinued and x-ray therapy was instituted along with di-iodotyrosin, a high caloric diet and rest in bed. Two months later the B. M. R. was plus 56, but the body weight had increased from 110 to 123 pounds. The administration of Lugol's solution was reinstituted for two weeks with an increase in weight to 130 pounds and a drop in the B. M. R. to plus 28. A subtotal thyroidectomy was done and on the second postoperative day auricular fibrillation was noted. This was controlled with digitalis. Six weeks following the operation the B. M. R. was plus 11 and the patient's body weight was only 4 pounds below his average.

The diagnosis of hyperthyroidism could easily have been overlooked in this case because of the predominant cardiac symptoms, the age of the patient and the absence of the palpable thyroid gland. The diagnosis was definitely established by the elevation of the B. M. R. The case illustrates acute hyperthyroidism, with a sudden, severe onset, a weight loss of 25 pounds and myocardial involvement. Auricular fibrillation as a postoperative complication confirmed the importance of the prolonged preoperative treatment.

Case 12743, male, aged 27, reported for examination Feb. 22, 1934. One month previously he had been admitted to a hospital in shock following an attack of acute diarrhea, abdominal pain and soreness. Morphine and intravenous saline were required for relief. Two more attacks of diarrhea and a loss of weight of 19 pounds occurred within an interval of one month.

There was a past history of a goiter, and a cough since the age of 15.

His height was 5 feet, 9½ inches, weight 130 pounds; his normal weight being 150 pounds. Systolic blood pressure was 150, diastolic blood pressure 80, temperature 99-1/5°F., pulse rate 120. There was no exophthalmus, but the left lobe of the thyroid gland was large and firm; the right lobe was not palpable. The lungs were clear to percussion and auscultation and there was no cardiac enlargement. There was a moderate tremor of the fingers. Laboratory findings were unimportant except for a basal metabolic reading of plus 30. A thyroidectomy was advised, but was refused by the patient. It was impossible to convince the patient that the goitre which had been present for twelve years was the cause of his trouble.

This patient returned 18 months later complaining of weakness, inability to work, nervousness, marked sweating, a tremor, no gain in weight and a continuation of the attacks of diarrhea. There had been no intervening treatment. His weight was 131 pounds, pulse rate 112, B. M. R. plus 33, systolic blood pressure 150 and diastolic blood pressure 80. He consented to an operation and the routine preoperative hyperthyroid regime was assumed for two weeks and the B. M. R. reading fell from plus 33 to plus 16. The preoperative rating was 8 and he was considered a good operative risk.

The adenomatous enlargement of the left lobe of the thyroid gland was removed and three weeks later the B. M. reading was -15. For 18 months this patient has done hard manual labor as a section hand with a railroad gang. Iodine in the form of Lugol's solution was not prescribed until the patient consented to have an operation. It is a definite mistake to prescribe iodine in hyperthyroidism except as a preoperative measure. If this routine is followed, the response to iodine therapy will be good and the operative risk will be reduced to a minimum.

The hyperthyroidism in this case was due to an adenoma which became toxic and though it did not progress rapidly, at the same time it was sufficiently severe to prevent work for a period of almost two years. This case is the complete antithesis of the first which was so acute and severe that it caused myocardial failure and complete disability in an amazing short period of time.

Case 14227, female, aged 60, reported for examination on March 24, 1936. She had been treated for hypertension two months prior to examination. Two weeks before examination she had developed a severe dull, persistent headache which was accompanied by soreness in her legs. One year previously a small lump had appeared in her neck which seemed to cause choking and discomfort. There was a past history of mild dyspnea and edema of the ankles of three years duration as well as nervousness and inability to sleep.

She was 5 feet, 4 inches tall; weight 162 pounds, with a systolic blood pressure of 170 and a diastolic blood pressure of 110. The pupils were slightly irregular but reacted to light. There was a hard nodule in the thyroid gland one inch in diameter. The lungs were clear to percussion and auscultation but the heart

sounds were of poor quality. The remaining examination was insignificant except for varicose veins of the legs. Her blood count was normal and the Kahn blood test was negative.

Because of the presence of hypertension and chronic myocarditis as well as a tumor mass in the region of the thyroid gland which was clinically suggestive of an early carcinoma, medical treatment was instituted for a period of two months. The blood pressure dropped to 155/90 and the dizziness, dyspnea and headache disappeared. At that time the tumor in the neck appeared to be larger than it had been at the time of the initial examination and it was removed. The pathological report by Dr. E. L. Bishop was: "The structure indicates a rather cellular papillary adenocarcinoma arising in the adenoma. I believe the malignancy is low but these tumors are notorious for their metastasis in spite of the low malignancy." This patient has no evidence of a recurrence of the carcinoma as yet and x-ray treatments are still being given. This case is reported to illustrate the importance of removing clinically benign thyroid tumors which are undergoing some change in size and consistency in patients over 25 years of age.

*Factors Used in Determining the Relative
Operative Risk of Hyperthyroid Patients*

	Rating
1. Duration of disease (not over 1 year)	1
2. Basal pulse on admission (not over 110 per minute)	1
3. Basal metabolic rate on admission (not over plus 50%)	1
4. Age of patient (not over 35 years)	1
5. Gain in weight under treatment	1
6. Mental attitude of the patient, i. e., no undue apprehension	1
7. No cardiac irregularities or evidence of congestive heart failure	3
8. Preoperative basal metabolic rate (not over plus 30%)	1
Total	10

A rating of 7 is graded good; 5 to 6, fair; below 5, poor operative risk.

The fact is generally accepted that 90 per cent of all carcinomas of the thyroid are preceded by some form of pathologic change, usually adenomas. At the same time about two per cent of thyroid adenomas in the aggregate become malignant. It is advocated by some authorities that all adenomas of the thyroid in patients over 25 years of age should be removed surgically. Such a course seems too radical, but all adenomas of the thyroid in patients over 25 that are increasing in size, or, are changing in any form clinically should be removed surgically. Ninety-three per cent of the cases of Clute and Warren with malignancy of the thyroid gland microscopically diagnosed, obtained a cure. Such good re-

sults can only be attained by removing adenomas which appear clinically to be benign.

Summary

A method has been offered which has proved to be of value in determining whether a patient with hyperthyroidism is a good, poor, or bad operative risk. The details of a routine preoperative hyperthyroid treatment have been given and three cases are reported, the first representing a very acute and severe type of hyperthyroidism of short duration; the second, the chronic, slowly progressive, but disabling form of hyperthyroidism of long duration; and the third, an early carcinoma of the thyroid gland in a small adenoma.

BIBLIOGRAPHY

1. Clute, H. M. and Warren S.: The Prognosis of Thyroid Cancer. Surg., Gynec. and Obst., 60:861-874, 1935.
2. Goodwin, G. M.: The Treatment of Hyperthyroidism. M. Clin. North America, 17:1, 171, 1934.
3. Smith, M. K.: The Results of Operation for Hyperthyroidism from the Standpoint of the Basal Metabolism. S. Clinic North America, 14:481, 1934.
4. Starr, Paul: Thyroid Disease—International Abstract of Surgery. Surgery, Gynec. and Obst., 63:313-337, 1936.
5. Wells, R. Lomax: Basic Clinical Factors in Evaluating Treatment and Prognosis in Hyperthyroidism. Med. Annals of the District of Columbia, Vol V, No. 11, 1936.

DISSECTING ANEURYSM OF AORTA

The three cases of dissecting aneurysm of the aorta that T. E. MCGEACHY and J. E. PAULLIN, Atlanta, Ga. (*Journal A. M. A.*, May 15, 1937), report, in which a correct diagnosis was made before death, bring the total number to twelve, which is far short of those in which a diagnosis could have been made during life. The records of three others are also given in which the diagnosis was not made, in one of which no history was obtainable. This presentation is made in an endeavor to stimulate interest and thereby raise the number of correct diagnoses to a respectable percentage of the whole. Dissecting aneurysm of the aorta is an incomplete rupture of the aortic wall wherein the escaping fluid separates the layers of the arterial wall to a variable extent. There is usually a terminal rupture at some distant point, either externally or into the original blood channel. Rarely, spontaneous fibrosis and healing occur without a second rupture. The history, incidence, causative factors, clinical manifestations, physical signs, termination, laboratory observations, differential diagnosis and a summary of cases reported in the English literature are given. More correct diagnoses can be made if particular attention is directed to a careful history of the onset and progress of the symptoms with a meticulous physical examination. The x-ray examination is of value as confirmatory evidence and the electrocardiogram may be of some help, particularly if tracings are made each day. An existing hypertension, with perhaps a sudden sharp increase in the arterial pressure, is the provoking cause of rupture in the majority of patients.

MEDICAL ASSOCIATION OF GEORGIA

FINANCIAL STATEMENT

Receipts and Disbursements

April 16, 1936 to April 30, 1937

RECEIPTS

April 16, 1936—

Cash in bank	
subject to check	\$9,128.11
History fund,	
savings account	1,213.03
Cash	\$10,341.14
Receipts	16,977.71
Total	\$27,318.85

DISBURSEMENTS

Itemized statement of disbursements	\$13,800.53
History fund—savings	
account	\$1,231.29
Savings account	3,535.06
Cash subject to check	8,751.97
Cash on hand	13,518.32
Total	\$27,318.85
Gain in cash on hand	\$3,177.18

DISBURSEMENTS

April 16, 1936 to April 30, 1937

No.	Name	Amount
2537—	L. F. Livingston, Postmaster	
	Deposit for postage to mail Journal	\$25.00
2538—	Sommer Badge Manufacturing Co.	
	750 Badges for the Savannah session, April 21-24, 1936	41.84
2539—	Forest City Lumber Co.	
	Lumber for the scientific exhibit at the Savannah session	60.00
2540—	Price & Mapes	
	Printing signs for the Savannah session and scientific exhibit	9.75
2541—	L. F. Livingston, Postmaster	
	Postage	30.00
2542—	M. Fairchild Levison	
	Special stenographic work at the Savannah session for the Reference Committee	17.00
2543—	J. M. Williams	
	Night watchman for the commercial exhibit during the Savannah session, April 20-24, 1936	10.00
2544—	Mrs. Katherine Stapleton	
	Work at Registration Desk during the Savannah session, April 21-24, 1937	16.00
2545—	Cash	
	Cash paid for expenses of commercial exhibitors, wires, phone calls, stenographer for Reference Committee and nails for scientific exhibit	21.36

2546—H. L. Rowe

Expenses at Savannah, April 19-24, 1937, for room rent and meals during the Savannah session. 18.80

2547—John Schierer

Signs for scientific exhibits—Savannah session 2.00

2548—John H. Harland Company

15,500 Letterheads and 15,000 Envelopes 97.02

2549—Southern Bell Tel. & Tel. Co.

Telephone account to April 21, 1936 6.15

2550—Empire Letter Shop

Multigraphing letters with signature of Dr. Jas. E. Paullin, President 1.85

2551—Wrigley Engraving Co.

Mat and work on electros for advertisers 8.11

2552—Lyon-Young Printing Co.

1,000 Programs for the Savannah session and 250 programs for the Woman's Auxiliary 144.30

2553—Lyon-Young Printing Co.

Printing and mailing 2,000 copies of the April, 1936, issue of the Journal 314.88

2554—Addressograph Co.

Ribbon for addressograph .94

2555—Service Engraving Co.

Halftones for illustrations used in the Journal 15.61

2556—Bryan, Middlebrooks & Carter, Attys.

Attorney's fee for Judge Wood in suit of T. J. Weatherford vs. Dr. Grady N. Coker and Dr. F. B. Murphy, Canton 50.00

2557—Edgar D. Shanks

Salary as Secretary-Treasurer for April, 1936 150.00

2558—H. L. Rowe

Salary as Executive Secretary for April, 1936 175.00

2559—C. W. Roberts, M.D.

Payment on expenses to attend the Kansas City session of the American Medical Association as a delegate 100.00

2560—Olin H. Weaver, M.D.

Payment on expenses to attend the Kansas City session of the American Medical Association as a delegate 100.00

2561—Wm. H. Myers, M.D.

Payment on expenses to attend the Kansas City session of the American Medical Association as a delegate 100.00

2562—Arthur M. Shipley, M.D.

Expenses to and from Savannah, invited guest of the Association 38.75

2563—Jonathan C. Meakins, M.D.

Expenses to and from Savannah, invited guest of the Association 94.93

2564—Citizens & Southern National Bank

Transferred to savings account (\$3,500.00)

2565—Miss Annie Jacks		2585—Lyon-Young Printing Co.	
Commission on advertising order	22.50	Printing and mailing 2,050 copies	
2566—Logan Clarke Insurance Agency		of the June, 1936 issue of the	
Premium on surety bond for Sec-		Journal	317.82
retary-Treasurer	5.00	2586—Western Union Telegraph Co.	
2567—Hotel DeSoto, Savannah		Telegraph account for May, 1936 . .	5.48
Expenses for J. C. Meakins, Arthur		2587—Service Engraving Co.	
M. Shipley and carpenters work on		Repairs on electros for advertisers .	1.84
scientific exhibit	74.75	2588—Empire Letter Shop	
2568—Gresham's Flowers		Stationery and multigraphing letters	
Wreath for the unveiling of the		to Councilors, Vice-Councilors and	
statue of Crawford W. Long at		officers of county societies, also to	
Danielsville, March 30, 1936 . .	5.00	delinquent and former members . .	8.10
2569—Western Union Telegraph Co.		2589—Southern Bell Tel. & Tel. Co.	
Telegraph account	3.71	Telephone account to June 21, 1936	6.15
2570—Fulton County Medical Society		2590—John H. Harland Co.	
Rent for April, May and June,		Letterheads for officers and com-	
1936	30.00	mittees	46.83
2571—Master Reporting Co.		2591—Edgar D. Shanks, M.D.	
Reporting and transcribing minutes		Salary as Secretary - Treasurer for	
of the Council, House of Delegates		June, 1936	150.00
and general meetings	301.54	2592—H. L. Rowe	
2572—L. F. Livingston, Postmaster		Salary as Executive Secretary for	
Postage	30.00	June, 1936	175.00
2573—Service Engraving Co.		2593—L. F. Livingston, Postmaster	
Cut from photo of Dr. Geo. A.		Deposit for postage to mail Journal	25.00
Traylor, President-elect and work		2594—J. E. Penland, M.D.	
on electros for advertisers	9.68	Expenses incurred as Councilor . . .	5.50
2574—Wrigley Engraving Co.		2595—L. F. Livingston, Postmaster	
Mats from ads for Georgia Power		Postage	30.00
Company	2.00	2596—Commercial Envelope Co.	
2575—Southern Press Clipping Bureau		25,000 Envelopes for mailing the	
News clippings for April and May,		Journal	76.17
1936	10.00	2597—William Anderson	
2576—Ivan Allen-Marshall Co.		Delivering envelopes to storage room	1.00
Pencils, Gem clips, twine, ink, type-		2598—Miss Annie Jacks	
writer ribbon, wrapping paper and		Commission on advertising order . .	6.75
erasers	5.55	2599—Southern Press Clipping Bureau	
2577—Empire Letter Shop		News clippings for June and July,	
Signature plate for President Min-		1936	10.00
chew, multigraphing letters in refer-		2600—Lyon-Young Printing Co.	
ence to public meetings and post-		Printing and mailing 1,875 copies	
graduate instruction	7.50	of the July, 1936 issue of the Jour-	
2578—Southern Bell Tel. & Tel. Co.		nal	307.52
Telephone account to May 21, 1937	6.15	2601—Lyon-Young Printing Co.	
2579—Edgar D. Shanks, M.D.		500 Reprints of abstract of the pro-	
Salary as Secretary - Treasurer for		ceedings of the House of Delegates	
May, 1936	150.00	and 100 reprints of officers and com-	
2580—H. L. Rowe		mittees	16.00
Salary as Executive Secretary for		2602—American Medical Association	
May, 1936	175.00	One copy of the Fourteenth Edition	
2581—Miss Annie Jacks		of the American Medical Directory .	12.00
Commission on advertising order . .	22.50	2603—Service Engraving Co.	
2582—Lyon-Young Printing Co.		Repairs on electros for advertisers . .	3.43
Printing and mailing 2,000 copies		2604—Western Union Telegraph Co.	
of the May, 1936 issue of the		Telegraph account for June, 1936 .	1.37
Journal	314.88	2605—Southern Bell Tel. & Tel. Co.	
2583—J. F. Thompson Engraving Co.		Telephone account to July 21, 1936	6.15
Stationery for President B. H. Min-		2606—Edgar D. Shanks, M.D.	
chew, and officers and committees . .	97.46	Salary as Secretary - Treasurer for	
2584—L. F. Livingston, Postmaster		July, 1936	150.00
Postage	30.00	2607—H. L. Rowe	
		Salary as Executive Secretary for	
		July, 1936	175.00

2608—Fulton County Medical Society Rent for July, August and September, 1936	30.00	News clippings for August and September, 1936	10.00
2609—The C. A. Dahl Company Floral design for Mrs. E. C. Thrash, widow of Dr. E. C. Thrash, past-President	7.82	2632—Empire Letter Shop Multigraphing letters to delinquent and former members and letters to county secretaries for the Committee on Public Policy and Legislation . .	6.85
2610—J. L. Campbell, M.D. Appropriation for Cancer Commission to continue program as outlined	200.00	2633—Service Engraving Co. Copper halftones for illustrations and electro for page ad of Merck & Company	14.64
2611—J. E. Penland, M.D. Expenses incurred as Councilor	13.25	2634—Southern Bell Tel. & Tel. Co. Telephone account to Sept. 21, 1936	6.15
2612—State Department of Public Health Stationery, ink and type form used to mimeograph forms for the Medical Economic Survey	30.93	2635—Western Union Telegraph Co. Telegraph account	2.00
2613—Miss Annie Jacks Commission on advertising orders	6.26	2636—Lyon-Young Printing Co. Printing and mailing 1,900 copies of the September, 1936 issue of the Journal	322.00
2614—L. F. Livingston, Postmaster Postage	30.00	2637—Edgar D. Shanks, M.D. Salary as Secretary - Treasurer for September, 1936	150.00
2615—Lyon-Young Printing Co. Printing and mailing 1,875 copies of the August, 1936 issue of the Journal and reprints for Dr. T. C. Davison, Associate Editor	324.27	2638—H. L. Rowe Salary as Executive Secretary for September, 1936	175.00
2616—Associated Mutuals, Inc. Premium on \$1,000 fire insurance policy for one year	5.70	2639—Service Engraving Co. Cuts for illustrations	55.35
2617—L. F. Livingston, Postmaster Deposit to pay postage on business reply envelopes	10.00	2640—Webb & Martin, Inc. 6,000 Envelopes for mailing and returning galley proofs	26.80
2618—Ivan Allen-Marshall Co. Typewriter ribbon, carbon paper and Gem clips	4.50	2641—Ivan Allen-Marshall Co. Journal for registering names of members for 1937, index tabs, pencils and twine	4.15
2619—Southern Bell Tel. & Tel. Co. Telephone account to Aug. 21, 1936	6.15	2642—L. F. Livingston, Postmaster Postage	30.00
2620—American Surety Co. of N. Y. Premium on surety bond for Executive Secretary	5.00	2643—Miss Annie Jacks Commission on ads	14.50
2621—Southern Engraving Co. Repairs on electros for advertisers	3.40	2644—Piedmont Hotel, Atlanta Account at restaurant for Committee on Public Policy and Legislation	12.25
2622—Service Engraving Company Copper halftones for illustrations	11.60	2645—Webb & Martin, Inc. Printing and mailing 1,925 copies of the October, 1936 issue of the Journal	293.16
2623—Addressograph Company Addressograph ribbon . . . . .	.94	2646—Webb & Martin, Inc. Printing 2,000 membership cards	13.50
2624—Edgar D. Shanks, M.D. Salary as Secretary - Treasurer for August, 1936	150.00	2647—Southern Bell Tel. & Tel. Co. Telephone account to Oct. 21, 1936	8.08
2625—H. L. Rowe Salary as Executive Secretary for August, 1936	175.00	2648—Webb & Martin, Inc. 1,000 Letterheads printed both sides with zinc etchings for mailing galley proofs	11.68
2626—L. F. Livingston, Postmaster Postage	30.00	2649—Empire Letter Shop Letters multigraphed for county secretaries and to former and delinquent members	6.70
2627—L. F. Livingston, Postmaster Postage	30.00	2650—Edgar D. Shanks, M.D. Salary as Secretary - Treasurer for October, 1936	150.00
2628—J. F. Thompson Engraving Co. Printing 500 acknowledgments	1.75	2651—H. L. Rowe Salary as Executive Secretary for	
2629—L. F. Livingston, Postmaster Deposit for postage to mail Journal	25.00		
2630—Southern Engraving Co. Work on electros for advertisers	2.05		
2631—Southern Press Clipping Bureau			

October, 1936	175.00	and Legislation	25.00
2652—L. F. Livingston, Postmaster Postage	30.00	2672—L. F. Livingston, Postmaster Postage	30.00
2653—Fulton County Medical Society Rent for October, November and December, 1936	30.00	2673—James E. Paullin, M.D. Expenses incurred for the Medical Economic Survey	2.35
2654—J. F. Thompson Engraving Co. Engraving name and address of Dr. Glenville Giddings on L. G. Hard- man Loving Cup	8.60	2674—Webb & Martin, Inc. 500 Reprints for Dr. Dan C. Elkin, Associate Editor	22.50
2655—Atlanta Biltmore Hotel Expenses of Committee on Public Policy and Legislation at restaurant	4.20	2675—Webb & Martin, Inc. Printing and mailing 1,925 copies of the December, 1936 issue of the Journal	300.20
2656—Service Engraving Co. Repairs and mounting electros for advertisers	7.63	2676—Ivan Allen-Marshall Co. Typewriter paper, ribbon, pencils, rubber bands, ledger and paste	8.00
2657—Miss Annie Jacks Commissions on ads in the Novem- ber Journal et al.	37.91	2677—Addressograph-Multigraph Corp. Addressograph plates and ribbon	2.95
2658—Webb & Martin, Inc. Printing and mailing 3,000 copies of the November, 1936 issue of the Journal	393.18	2678—Service Engraving Co. Cut for illustration, electro for the General Electric X-Ray Corporation and repairs on other electros for ad- vertisers	17.28
2659—L. F. Livingston, Postmaster Postage	30.00	2679—Southern Bell Tel. & Tel. Co. Telephone account to Dec. 21, 1936	6.90
2660—Southern Press Clipping Bureau News clippings for October and No- vember, 1936	10.00	2680—Empire Letter Shop Multigraphing letters for the Com- mittee on Public Policy and Legisla- tion; letters to county secretaries with proofs for Directory and let- ters to delinquent and former mem- bers	19.10
2661—Empire Letter Shop Multigraphing letters sent to delin- quent and former members and to county secretaries; invitations to physicians to attend dinner and meeting in reference to legislative program	9.80	2681—The C. A. Dahl Company Floral Cross for Clark Howell, Editor, Atlanta Constitution, charged to Dr. J. L. Campbell, as directed by the President	15.00
2662—Webb & Martin, Inc. Printing letters to be mailed with galley proofs	3.50	2682—Ansley Hotel, Atlanta Cigars and cigarettes—luncheon at Ansley Hotel for Committee on Pub- lic Policy and Legislation with in- vited guests	3.54
2663—Southern Bell Tel. & Tel. Co. Telephone account to November, 1936	6.42	2683—Bryan, Middlebrooks & Carter, Attys. Retainer as attorneys for the Asso- ciation, Jan. 1, 1937 to Dec. 31, 1937	1,000.00
2664—L. F. Livingston, Postmaster Deposit for postage to mail Journal	25.00	2684—Edgar D. Shanks, M.D. Salary as Secretary - Treasurer for December, 1936	150.00
2665—Edgar D. Shanks, M.D. Salary as Secretary - Treasurer for November, 1936	150.00	2685—H. L. Rowe Salary as Executive Secretary for December, 1936	175.00
2666—H. L. Rowe Salary as Executive Secretary for November, 1936	175.00	2686—Walter W. Brown Publishing Co. 2,000 Statement blanks, 2,000 forms for reporting officers and members, 1,000 health examination record forms	33.00
2667—S. T. R. Revell, M.D. Expenses incurred for the Commit- tee on Public Policy and Legisla- tion	7.80	2687—Western Union Telegraph Co. Telegraph account for November and December, 1936	3.67
2668—Fulton County Medical Society Refund for overpayment of dues for eight members	48.00	2688—L. F. Livingston, Postmaster Postage	30.00
2669—Miss Annie Jacks Commission on advertising orders	54.00	2689—L. F. Livingston, Postmaster	
2670—B. H. Minchew, M.D. Honorarium for President, 1936-37	150.00		
2671—Cash General and miscellaneous expenses of the Committee on Public Policy			

Deposit for postage-due account..	10.00	2710—Miss Annie Jacks	
2690—L. F. Livingston, Postmaster		Commission on advertising order	9.75
Postage—Committee on Public Policy and Legislation.....	30.00	2711—S. H. Benedict	
2691—Southern Press Clipping Bureau		155 Prints of floor space for commercial exhibit, Macon session, May 11, 12, 13, 14, 1937.....	22.00
News clippings for January and February, 1937.....	10.00	2712—Webb & Martin, Inc.	
2692—Service Engraving Co.		Printing and mailing 2,000 copies of the February, 1937 issue of the Journal	301.66
Cuts for illustrations and changes in electros for advertisers.....	43.17	2713—Webb & Martin, Inc.	
2693—Empire Letter Shop		Printing 2,000 4-page supplements to the Journal for the Committee on Public Policy and Legislation and 2,000 copies of Radio Waves	47.65
Multigraphing copies of bills introduced in the General Assembly of Georgia and making signature cut—Committee on Public Policy and Legislation (Furnished stationery) ..	69.45	2714—L. F. Livingston, Postmaster	
2694—Southern Bell Tel. & Tel. Co.		Deposit for postage to mail Journal	25.00
Telephone account to Jan. 21, 1937	6.54	2715—Southern Bell Tel. & Tel. Co.	
2695—Walter W. Brown Publishing Co.		Telephone account to Feb. 21, 1937	7.00
2,000 Letterheads for Committee on Public Policy and Legislation.....	9.25	2716—Empire Letter Shop	
2696—L. F. Livingston, Postmaster		Multigraphing letters in reference to program and letters for the Committee on Public Policy and Legislation	5.00
Postage	30.00	2717—Edgar D. Shanks, M.D.	
2697—Edgar D. Shanks, M.D.		Salary as Secretary - Treasurer for February, 1937	150.00
Salary as Secretary - Treasurer for January, 1937	150.00	2718—H. L. Rowe	
2698—H. L. Rowe		Salary as Executive Secretary for February, 1937	175.00
Salary as Executive Secretary for January, 1937	175.00	2719—L. K. Starr	
2699—Webb & Martin, Inc.		For Committee on Public Policy and Legislation	50.00
Printing and mailing 1,950 copies of the January, 1937 issue of the Journal	310.75	2720—Miss Annie Jacks	
2700—Webb & Martin, Inc.		Commission on advertising orders	10.00
2,400 16-page Journal supplements and 500 statement forms.....	123.70	2721—Ivan Allen-Marshall Co.	
2701—Miss Annie Jacks		Stationery for the Committee on Public Policy and Legislation ..	18.85
Commission on advertising orders.	42.41	2722—Service Engraving Co.	
2702—J. F. Thompson Engraving Co.		Cuts for illustrations and repairs on electros for advertisers.....	16.26
Business cards for the Committee on Public Policy and Legislation...	4.50	2723—Western Union Telegraph Co.	
2703—Service Engraving Co.		Account for Committee on Public Policy and Legislation.....	1.26
Cuts for illustrations and work on electros for advertisers.....	110.93	2724—McDonald Printing Co.	
2704—Western Union Telegraph Co.		Stationery for Committee on Public Policy and Legislation.....	8.25
Telegraph account for the Committee on Public Policy and Legislation for January, 1937.....	14.02	2725—Piedmont Hotel, Atlanta	
2705—Fulton County Medical Society		Account for Committee on Public Policy and Legislation.....	24.60
Rent for January, February, March and April, 1937.....	40.00	2726—L. F. Livingston, Postmaster	
2706—Valdosta Greenhouse		Postage	30.00
Floral wreath for Mrs. J. M. Smith, Valdosta, wife of Past-President J. M. Smith, M.D.	10.00	2727—L. K. Starr	
2707—L. K. Starr		For Committee on Public Policy and Legislation	50.00
For Committee on Public Policy and Legislation	50.00	2728—Webb & Martin, Inc.	
2708—L. F. Livingston, Postmaster		Printing and mailing 2,000 copies of the March, 1937 issue of the Journal	303.08
Postage	30.00	2729—Miss Annie Jacks	
2709—Cash		Commission on advertising order..	6.25
For Committee on Public Policy and Legislation	75.00	2730—H. F. Sharpley, Jr., M.D.	
		Out (\$26.92)	
		2731—L. F. Livingston, Postmaster	

Postage	30.00
2732—Miss May Ferguson	
Special stenographic work for Committee on Public Policy and Legislation	9.50
2733—L. F. Livingston, Postmaster	
Postage	30.00
2734—Southern Press Clipping Bureau	
News clippings for February and March	10.00
2735—A. B. Dick Company	
Mimeograph machine and correction fluid	155.55
2736—John H. Harland Company	
15,000 Letterheads	67.50
2737—Southern Bell Tel. & Tel. Co.	
Account to March 21, 1937	11.99
2738—Ivan Allen-Marshall Co.	
Wrapping paper, erasers, twine, pencils and paste	4.85
2739—Herff-Jones Company	
Key for President and die for making it and others	23.34
2740—Edgar D. Shanks, M.D.	
Salary as Secretary - Treasurer for March, 1937	150.00
2741—H. L. Rowe	
Salary as Executive Secretary for March, 1937	175.00
2742—Mrs. G. R. Sims	
Work for Committee on Public Policy and Legislation	50.00
2743—C. C. Aven, M.D.	
Expenses incurred for Committee on Public Policy and Legislation	50.00
2744—Ed H. Greene	
Expenses incurred for Committee on Public Policy and Legislation	50.00
2745—J. L. Campbell, M.D.	
Expenses incurred for Committee on Public Policy and Legislation	50.00
2746—Edgar D. Shanks, M.D.	
Expenses incurred for Committee on Public Policy and Legislation	50.00
2747—Piedmont Hotel	
Meals for the Committee on Public Policy and Legislation	2.85
2748—Miss Annie Jacks	
Commission on orders for advertising	6.75
2749—B. H. Minchew	
Telephone and telegraph accounts and postage used officially as President	40.00
2750—Western Union Telegraph Co.	
Telegraph account for the Committee on Public Policy and Legislation	14.15
2751—Service Engraving Co.	
Cuts and electros for advertisers	14.76
2752—L. F. Livingston, Postmaster	
Postage	30.00
2753—Miss Annie Jacks	
Commission on advertising orders	9.50

2754—L. F. Livingston, Postmaster	
Postage	30.00
April 21, 1936—Check on E. L. Prince, M.D.	
Returned unpaid and paid since	6.00
June 4, 1936—Check on R. J. Clower, M.D.	
Returned unpaid and paid since	6.50
Fulton National Bank—Exchange charged for fiscal year	9.38
Total	\$13,800.53

R E C E I P T S

April 16, 1936 to April 30, 1937

Sources of Income

Dues	\$10,587.90
Advertising	5,425.49
Exhibits	895.00
Subscriptions	16.00
Interest	53.32

Total receipts \$16,977.71

D I S B U R S E M E N T S

Classified

April 16, 1936 to April 30, 1937

Journal	\$6,857.34
Salaries	1,950.00
Committee on Public Policy and Legislation	1,050.03
Committee on Medical Defense	1,050.00
Postage and business reply postage	387.00
Stationery	216.64
Stationery for officers and committees	153.97
Delegates to A. M. A.	300.00
Cancer Commission	200.00
Telephone and Telegraph	129.47
Reporting Savannah session	301.54
President	213.34
Mimeograph	155.55
Guests at Savannah session	148.43
Programs	144.30
Scientific exhibit	184.16
Multigraphing, badges, night watchman, Reference Com., Com. for Study of Maternal Mortality, help at registration desk, signs, Council, A.M. Directory, flowers, insurance, reprints for Associate Editors, membership cards, engraving Hardman Cup, dues refunded, exchange, cash items returned and other necessary expenses	358.76

Total Expenditures \$13,800.53

Gain 3,177.18

Total \$16,977.71

THE JOURNAL

Receipts and Disbursements

April 16, 1936 to April 30, 1937

RECEIPTS

Advertising	\$5,425.49	
Subscriptions from members ..	4,537.68	
Other subscriptions	16.00	\$9,979.17

DISBURSEMENTS

Printing and mailing	\$3,803.40	
Salaries	1,950.00	
Cuts and electros.	337.71	
Postage	279.00	
Commissions on advertising ..	248.08	
Envelopes	77.17	
News clippings	60.00	
Rent	60.00	
Stationery to send proofs	41.98	
Profit	3,121.83	\$9,979.17

REGIONAL ILEITIS*

So-Called Non-Specific Intestinal Granuloma

W. EDWARD STOREY, M.D.
Columbus

Case Report

A white male, aged 24, was well so far as he knew until two years before admittance. At that time he began to experience constipation which, during the course of a year, gradually progressed to a state of obstipation. The constipation, at first, existed alone but midway the year belching and pyrosis were common after meals, and toward the end of the year much flatulence, excessive peristaltic rumbling, and rhythmic lower abdominal discomfort were added. These symptoms brought him to a surgeon who diagnosed the case as chronic appendicitis and advised appendectomy. Otherwise there had been no symptoms. The past history revealed measles, whooping cough and tonsillectomy in childhood, and nothing else. The family history was negative for tuberculosis and cancer.

Notes regarding the physical findings immediately before operation are not available because the operation was done elsewhere, but complete operative and pathologic notes were obtained and are given herewith:

"Operation: McBurney muscle-splitting operation used. Peritoneum opened, and on inspection of the right lower quadrant, there was a mass felt in the pelvis; therefore, McBurney's incision was closed in the usual manner and a long, right rectus incision made. Upon opening the abdomen, almost the entire ascending colon was found to be buried in dense adhesions. In the pelvis was a large mass which could be delivered easily to the outside, and which was found to be an angular growth involving about 6 inches of the terminal ileum,

producing considerable thickening and hypertrophy of the terminal ileum, giving it a hose-like feel and causing considerable obstruction at the ileocecal valve. The terminal ileum was two or three times its normal size and had lost its flexibility. In the mesentery, along the terminal ileum, were large lymph glands which seemed to extend up into the retroperitoneal tissues. One lymph gland was excised for frozen section. The report showed no evidence of metastasis and apparently merely an inflammatory node. Palpation of the liver showed no evidence of any metastatic masses. The cecum and ascending colon were mobilized by sharp dissection, freeing them from their adhesions and allowing free mobility of the cecum. A resection of about 8 inches of terminal ileum were closed and safely inverted by two or three purse-string sutures. Mass was entirely excised by cautery, as was the stump of the terminal ileum and the remainder of the ascending colon, using two rows of No. 0 chromic sutures. The appendix was also removed in toto with the mass. The anastomosis was then dropped back and assumed a free, normal position in the right iliac fossa without any tension. The abdomen was then sewed up, using No. 1 plain for peritoneum; No. 2 chromic for muscle and fascia; skin sutured with interrupted sutures of silkworm gut.

Post-Operative Diagnosis: Tuberculosis of terminal ileum, possibly carcinoma. (J. P. R.) 8-3-35."

Gross Examination

The specimen is a piece of terminal ileum—circa 35 cm. long. Near the cecum and involving an area of about 10 cm. of the ileum is a circular or cuff-like thickening of the intestine. The wall near the involved portion is about 2 to 3 cm. thick. The lumen is constricted to the point where it will scarcely admit a lead pencil. Above the tumor, the ileum is dilated to approximately one and one-half the normal size. The mucosa is not definitely ulcerated, but the surface is necrotic and there is evidence of longitudinal furrowing. The mucosa is pale in color. Above the point of constriction, the mucosa is congested and shows a grayish exudate on the surface.

Microscopical Examination

The normal architecture of the mucosa has been replaced by a necrotic area beneath which is an area of granuloma tissue infiltrated with polynuclear leukocytes. The submucosa and muscle coats and subserosa are thickened by collagen fibrils and local areas of granuloma and lymphoid follicles. There are no tubercles.

Diagnosis

Terminal ileitis with stenosis (non specific). (H. B. A.) 8-3-35.

Following operation convalescence was uneventful and to all appearances the patient was cured. Bowel movements were normal; he gained weight and in every way looked and felt well. Six months later he began to experience one to three loose stools with tenesmus which gradually increased in troublesomeness until he was admitted to the medical service at the Columbus City Hospital exactly one year after operation. As a result of the admittance complaint his appetite and strength were not good, but other-

* Case report from the Columbus City Hospital, Columbus.

wise there were no complaints. There had been no cough, weight loss, fever, hemoptysis, or night sweats. He denied venereal infection.

At his second hospital admittance, physical examination revealed nothing of note except that he was about 15 pounds under weight. Abdominal examination showed two healed scars but nothing else, and rectal examination was negative. The urine revealed nothing and a blood count showed R.B.C. 4,540,000; W.B.C. 6,750; Hgb. 82 per cent (Sabli); Dif: polymorphonuclear neutrophils 72; lymphocytes 24; eosinophiles 2. Several stools were negative for occult blood. Wassermann and Kahn tests were negative. Gastric analysis (Ewald): Free HCl 16-Total Acid 40. No tubercle bacilli were found in the stools even when concentration methods were used, and guinea-pig inoculation with a stool preparation proved negative. A barium enema revealed nothing and a stereoroentgenogram of the lungs was reported as follows:

X-Ray Findings: "Evidence of lymphatic and peribronchial reaction to Tbc. exposure consisting of peripheral extension and intensification of the pulmonary markings, thickened hila with calcification. There is also a thickened hilum with calcification. There is also a thickened interlobar septum on the right side. I believe this reaction has progressed to a degree that it is now the definite clinical entity of lymphatic and peribronchial Tbc. and chronic pleuritis. (W. F. J.) 7 29-36."

He remained in the hospital 21 days without fever or any other signs except the tenesmus which was much improved at discharge.

Comment: This case is instructive because: (1) Apparently a chronic non-specific granuloma may involve the ileocecal region to the point of obstruction; (2) In younger patients this may be mistaken for tuberculosis which has a historical predilection for this site, and in older patients it may be erroneously considered carcinomatous, hence the great value of biopsy, particularly frozen section at the operative table; (3) Clinically, diagnosis is difficult or impossible; the absence of tubercle bacilli from the stools is helpful, and the absence of secondary anemia is against obstructive carcinoma in that region; (4) The questions are raised, on the one hand, as to whether many cases diagnosed as hyperplastic ileocecal tuberculosis may not belong to a group of non-specific granuloma, and, on the other hand, whether these so-called non-specific granulomata might not, after all, be cases of the old familiar ileocecal tuberculosis in which secondary infection and granulative repair have gotten the upper hand and obscured what began originally as tuberculosis.

IRREGULAR SYMPTOMS OF SURGICAL CONDITIONS*

Report of Case

C. S. PITTMAN, M.D.
Tifton

I have chosen for my subject one that is very common, and yet one that is full of pitfalls and dangers to all of us who are engaged in the practice of medicine in any form.

Certainly no phase of the practice of medicine entails a greater responsibility than the proper handling of acute conditions within the abdomen. Often the life of the individual depends upon a proper diagnosis or upon the decision that a laparotomy is necessary even if a positive diagnosis cannot be made. Frequently the percentage of lives saved is inversely proportional to the hours of delay. Any procedure which helps make a diagnosis more certain and helps make it earlier should not only be welcomed by the attending physician and the surgeon who are shouldering the responsibility, but may also be the means of increasing the chances for recovery of the patient by more prompt operative interference.

Material assistance in acute abdominal conditions may often be obtained by the use of the x-ray. Many a surgeon has been saved the embarrassment of doing a laparotomy for acute appendicitis by finding a stone in the right ureter.

I wish to call your attention to those cardiac disturbances which simulate an acute surgical condition of the abdomen. I mention angina pectoris and coronary thrombosis. The latter is a perplexing problem in diagnosis and one which offers dangerous pitfalls in the differentiation of it from acute surgical conditions of the abdomen. Typical cases with a history of previous attacks of angina pectoris will offer little difficulty in diagnosis. But each patient must have his first attack without warning. The first indication of any serious trouble is the fulminating attack of severe pain. The experienced diagnostician will often be hard pressed in his differential diagnosis and es-

pecially will this be true when the pain is entirely confined to the upper abdomen. Vomiting, nausea and sometimes jaundice will confuse the picture. The examination may reveal marked tenderness and rigidity in the upper right abdomen, or a questionable mass in the gallbladder region with fever and a leukocytosis of 20,000 or more. With these findings the physician must consider perforated peptic ulcer, acute pancreatitis, acute gallbladder disease, a ruptured appendix or acute intestinal obstruction. Burns states that within 15 months he saw four cases which were sent into the hospital with diagnoses of acute abdominal emergencies. In each case a very careful examination was made together with electrocardiograms and a diagnosis of coronary thrombosis or angina pectoris was the result. Each of the individuals was saved an operation.

A case of acute abdominal disease must be placed in one of three classes. In the first class the truly surgical abdomen, where surgery will have to be seriously considered, we have such conditions as inflammations of various kinds, as acute appendicitis, peritonitis, salpingitis, pancreatitis, cholecystitis, perforation of gastric or duodenal ulcer, hemorrhage due to ruptured ectopic gestation, ruptured ovarian cysts or injuries, torsion of ovarian cysts and, finally, different forms of intestinal obstruction.

In the second class, among the non-surgical conditions of the abdomen we have to remember the possibilities of the various forms of colic, as intestinal, and possibly such conditions as pyelitis, Dietl's crisis, abdominal influenza and tuberculous peritonitis.

The third class, which gives rise to the most likely and serious pitfalls, consists of certain non-abdominal diseases; and here it will be agreed that the important thing is to remember their possibilities for they are not likely to be missed if the possibility of their resemblance to an acute abdominal disease is taken into consideration. Among such conditions, the most important are: pneumonia, especially in children, uremia, occasionally rheumatic and arteriosclerotic conditions, and diabetes which occasionally gives rise to acute abdominal pain and vomiting. Certain diagnostic points worthy of notice consist

in the relative value of observation of the temperature, pulse, nausea and vomiting and the history of pain.

In the differential diagnosis of these acute conditions of the abdomen, the following are the main causes of difficulty: pneumonia, uremia, typhoid fever, the so-called "abdominal influenza" and the different types of colics as intestinal, renal and biliary. Biliary and renal colic have a definite distribution of pain, as the pain occurs in characteristic places. In biliary colic, pain radiates down the epigastrium through to the back and especially to the shoulder blade. There is therefore no reason why a biliary colic should be mistaken for appendicitis, but it may well be mistaken for an acute inflammatory attack in the gallbladder. The practical point in this connection is that an acute gallbladder infection may need operation but biliary colic will subside. In renal colic the pain usually starts in the back under the last rib and radiates around and down to the front into the groin, testicle, penis and thigh.

In all cases of colic the pain is nearly always of a type that makes a patient move and writhe about so that an important point in getting the history is to find out the nature of the pain and whether the patient lies still in bed or writhes about. If the pain is such that he lies still it is strong evidence that he has an inflammatory condition or a perforation as movements increases the pain. If he writhes it is most likely colic or obstruction.

Case Report

On Dec. 31, 1935, I was called to see a man of 30 who was suffering with intense pain in the right testicle and penis, radiating upwards and outwards along the inner side of the iliac crest and toward the right kidney. His temperature and pulse were normal. Upon inquiry I learned that about three days before he had been struck in this region by a plow handle. I examined the testicle and along the course of the spermatic cord for tenderness and found moderate tenderness but no swelling. I advised an ice cap and elevation of the scrotum and aspirin for pain. At 11 o'clock I was called back and found him suffering intensely with pain in the penis. He had marked tenderness along the course of the spermatic cord. I administered morphine gr. $\frac{1}{4}$ and advised him to keep an ice cap applied. I saw him again the next morning and to my surprise, I discovered that he had symptoms of peritonitis. I advised laparotomy and found a ruptured appendix just along the right ureter. He died on the ninth day after operation.

The point I wish to stress is the absolute lack of true symptoms of appendicitis.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

JUNE, 1937

FIGHTING FOR SOMETHING

When physicians as individuals or groups begin a campaign against something that is believed contrary to the public good, immediately there arises the accusation that such act or acts are selfish and in the interest of the doctors themselves. However much we know this is not true, we must take cognizance of the attitude of mind which prompts such a supposition; and, it behooves us to change our method of approach and attack. Indeed, let us leave out all thoughts of attacking and concern our efforts with attempts to so mould public thinking that all people will slowly and surely come to the realization that we are fighting *for* something and that something is for their benefit.

Efforts which lead to ethical progress are so slow that it is difficult for the average mind to attune itself to its snail-like progression. There are a few minds so constituted and nurtured, but the great masses need enlightenment. Mr. Will Durant said: "Civilization is the precarious labor and luxury of a minority; the basic masses of mankind" hardly change from millennium to millennium." But the fact that we recognize the truth of his statement is evidence of increased knowledge.

At the eighty-eighth annual session of the MEDICAL ASSOCIATION OF GEORGIA in Macon, the keynote of everyone dealing with matters of public policy stressed the necessity of educating the public in regard to health: they must be told their health problems, and we, as physicians, should lend our fullest cooperation to the end that the great masses will be healthier and happier. More than thirty-five years ago a great president of our country, Mr. Grover Cleveland, advised *The Medical Society of the State of New York*: "Take the people into your confidence." Let us take his advice.

Poverty is not something new, but some socially-minded people have seemed to dis-

cover its existence only recently. There is not only inadequate medical care and hospitalization for some of our people, especially those in rural areas; but not enough of the right kind of food, clothing, housing and other comforts that make for happy and healthy existence. When we are able to provide our lowest income groups with these necessities sickness will not be so prevalent and the way will be opened for education in matters of health.

The suggestion and appeal for a Public Relations Bureau for the MEDICAL ASSOCIATION OF GEORGIA is an effort at educating the masses, and it should be the delight of every physician of our great State to contribute to its support. When ignorance of the essentials of health is banished, and the true foundations upon which the privilege of ministering to the ills of mankind are thoroughly understood, then we will have accomplished *something* by fighting *for* something, and it will not be necessary to fight against anything or anyone.

GEO. A. TRAYLOR, M.D.,

President.

EIGHTY-EIGHTH ANNUAL SESSION

The handful of Georgia physicians, including the great Crawford W. Long, who met in Macon in 1849 and organized the MEDICAL ASSOCIATION OF GEORGIA had faith, a faith developed and dedicated to the service of mankind. That faith has been kept, for the eighty-eighth annual session of the Association held in the same city was full of the things that make for scientific progress and public service.

The scientific sessions were attended by most of those who came; the scientific exhibits were excellent and attracted much attention; the commercial exhibits reflected the progress of the allied groups, and the entertainment features could not be excelled. Generally, there seemed to be a feeling that the physicians of the State of Georgia, the largest state east of the Mississippi River, were headed for bigger and better things.

The House of Delegates and Council of the Association had busy sessions and much business was transacted, all of which was for the benefit of the people whom we serve. The next annual session will be held in Augusta,

May 10, 11, 12, 13, 1938. New officers are: Dr. Geo. A. Traylor, Augusta, president; Dr. Grady Coker, Canton, president-elect; Dr. Hall Farmer, Macon, first vice-president; Dr. Hulett Askew, Atlanta, second vice-president; Dr. Edgar Shanks, Atlanta, secretary-treasurer, and Dr. J. W. Simmons, Brunswick, parliamentarian. Dr. Olin Weaver of Macon was re-elected delegate to the *American Medical Association*.

GRADY N. COKER, M.D.

To Dr. Grady N. Coker of Canton goes the honor of being the ninetieth President of the MEDICAL ASSOCIATION OF GEORGIA, having been elected president-elect at the eighty-eighth annual session of the Association.

Dr. Coker was born in Chappels, S. C., Dec. 17, 1894. He is the son of Dr. Newton J. and Effie (Trammell) Coker of Canton. His father has long been a practicing physician in North Georgia and has taken part in numerous civic enterprises for the benefit of his community and State.

Dr. Coker was graduated in 1915 from the Canton High School, after which he took a pre-medical course at Emory University, Oxford. Entering the Medical Department of the University of Georgia, Augusta, in 1916, he received the degree of Doctor of Medicine in 1920. Following his graduation in medicine, he was for three years an intern, assistant resident surgeon and resident surgeon of the University Hospital in Augusta. In July 1923 he joined his father in establishing the Coker Hospital, in Canton. The hospital was established in a remodeled home, which accommodated only ten beds. Later, as their practice grew, a new and modern institution was built with a fifty bed capacity.

Dr. Coker has done post-graduate work in many of the leading medical centers of this country. He took a special graduate course at Bellevue Hospital, New York, and studied for a time in Montreal, Canada. In 1927, he was honored by being made a Fellow of the American College of Surgeons.

During the World War, Dr. Coker enlisted for service to his country, but was soon transferred back to the medical school to complete his studies. For seven years he was a member of the Medical Reserve Corps.



GRADY N. COKER, M. D., Canton
President-Elect, 1937-1938



On Dec. 25, 1921, Dr. Coker was married to Miss Videssa Bryan. They are the parents of four children: Mary Trammell, Grady N., Jr., Robert Bryan and Peggy Dean.

In 1928, Dr. Coker was elected mayor of Canton and, with the exception of one year, has served continuously in that office to the present time. During his administration notable advancement has been made; a new school has been built, the water works have been enlarged, a new fire department with modern equipment and methods has been created, and a new municipal golf course has been established.

One of the foremost civic and fraternal leaders in the State, Dr. Coker is a charter member and past president of the Canton Lions Club, a member of the Atlanta Court of Jesters, No. 9; a member of the Delta Tau Delta Literary Fraternity and the Alpha Kappa Kappa Medical Fraternity. He was a member of the commission in charge of Georgia Exhibits during the Century of Progress Exposition in Chicago. He is a 32nd

Degree Mason by both the Scottish and York rites, and a past master of Canton Lodge No. 77. He is also a member of the Woodmen, Junior Order, and American Legion.

In medical organizations, Dr. Coker's affiliations and honors have been numerous. He is a past president of both the Cherokee and Ninth District Medical Societies; he has served as trustee of the Georgia Hospital Association, which he represented at the national meeting of the American Hospital Association in Chicago; he is past president of the Alumni Association of the Medical Department of the University of Georgia; he is a charter member of the Southeastern Surgical Congress, and a member of both the Southern and American Medical Associations. He has served in various capacities in the MEDICAL ASSOCIATION OF GEORGIA: Committee on Hospitals, Committee on Public Policy and Legislation, Cancer Commission, Fraternal Delegate to Other States, Vice-Councilor, Councilor and Vice-President.

Dr. Coker, although busy with his medical practice and other duties, is an enthusiastic golfer and fisherman, but his greatest pleasure is in hunting, and he owns one of the finest packs of Walker fox hounds in the State. He is a member of numerous fishing and hunting clubs, including: Stanley-Maddox-Coker Hunting Club, Lake Club, Crooked River Fishing Club and Cherokee Fish and Game Club.

HONORS

At the eighty-eighth annual session of the Association held in Macon, several members received honors for their scientific work and outstanding service to the public.

To Dr. J. L. Campbell, Atlanta, Professor of Clinical Surgery at Emory University School of Medicine and one of the South's leading students of cancer, goes the honor of having rendered the most distinguished medical service to his State during the past year. As chairman of the Cancer Commission of the MEDICAL ASSOCIATION OF GEORGIA, Dr. Campbell has worked for more than twenty years in an effort to provide a way for the care of all persons suffering with cancer. Through his efforts, assisted by the Committee on Public Policy and Leg-

islation of the Association and various lay groups, a bill has been enacted into law which will give the State Department of Public Health funds to be used for the medical care and hospitalization of indigent patients with cancer, and for educational work.

Dr. Campbell's name will be inscribed on the L. G. Hardman Loving Cup, which was given to the MEDICAL ASSOCIATION OF GEORGIA by the late Governor Hardman, who was a member of the Association for more than fifty years.

Dr. Glenville Giddings, Atlanta, Assistant Professor of Clinical Medicine at Emory University School of Medicine, won the Crawford W. Long award for the best research work in the State in 1935-36. Dr. Giddings has long been interested in the problem of sleep and has conducted thousands of experiments on normal individuals as well as those suffering from disease with the view of explaining both normal and abnormal reactions of the human body.

The Committee on Scientific Exhibit assembled a large assortment of exhibits for the session and it was evident everywhere that all physicians in the State are interested in developing both old and new problems. The Committee on Awards awarded certificates of merit to the following: First award, Committee on Maternal and Infant Mortality of the MEDICAL ASSOCIATION OF GEORGIA; second award, Steiner Cancer Clinic, Atlanta; and, third award, The Department of Pathology, School of Medicine of the University of Georgia, Augusta. Honorable mention was given to Drs. Michael Hoke, Lawson Thornton and Calvin Sandison, Atlanta; Drs. W. F. Lake and A. J. Ayers, Atlanta; and Dr. John D. Blackburn, Thomaston.

Early surgical removal of a circumscribed area of torulosis seems as logical to KENNETH W. TABER, Pasadena, Calif. (*Journal A. M. A.*, April 24, 1937), as the early removal of carcinoma. Surgery is not indicated in torulosis of the central nervous system or in generalized pulmonary torulosis—such as in the case that he reports—any more than surgery would be indicated in generalized carcinomatosis. The removal of a localized lesion either with the cautery or with the radio knife may well be considered as the treatment of choice. Whether the occasional pathogenesis of torulae depends on occasional variations in their own virulence, on the hypersensitivity, or on the lowered resistance of the persons affected is not yet proved. But it would appear from the facts in hand that both factors play a part.

AMERICAN MEDICINE

Recently two volumes have been published, entitled "American Medicine, Expert Testimony Out of Court," by the American Foundation for Studies in Government, which consists of opinions collected from approximately 2,200 physicians, representing all sections of the country and all departments of medicine. The report is voluminous but considers many problems of interest to the medical profession and, in particular, to those who have given study to the betterment of medical practice.

Numerous subjects are considered, some of them more or less controversial in nature; but the report differs from others in that it is a compilation of opinions which are accurately stated without any attempt being made to suggest a remedy for many of the conditions which are known to exist. Miss Lape and her associates have made a great contribution in submitting to the medical profession such a comprehensive, well edited and excellent statement of opinions from so many physicians. Among the various topics which have been discussed in the report are the following:

Is radical change needed in the present organization of medical care?

What is adequate medical care?

To what degree does modern, scientific high grade medical care exist?

Does the public demand medical care of high grade, and if it were available to everybody would half of the population still choose quacks, cultists and patent medicines?

To what extent is the government responsible for the health of individuals and what part should it play in promoting public health and providing medical service?

Is it possible to draw a distinct line of demarcation between preventive and curative medicine?

Is there too much specialization?

Is improving medical training and education in the personnel of the profession the first step in bettering the organization and distribution of medical care?

Can an individual physician really furnish scientific medical care alone, or are laboratory and consultation assistance absolutely necessary?

What is the status of the present family doctor? Is he passing, or is a new version of

him just coming into being?

Is the doctor-patient relation a sentimentality, or has it a practical value in scientific medicine?

Is there too much surgery?

Is there a method of controlling self-appointed specialists and ill qualified surgeons?

Is insurance (3 cents per day), or direct use of tax funds the answer?

Should the United States have a Ministry of Health set up and a Federal Department of Health in the President's cabinet?

Which, if any of the following, is the answer to present problems:

The status quo, compulsory insurance, various forms of voluntary insurance, thoroughgoing state medicine, evolutionary increase in government authority and functioning integrated with private practice.

Collected opinions concerning all of these questions have been submitted by doctors. These volumes represent an attempt to present a real picture of the thoughts of physicians concerning the economic and social aspects of medicine. It seems that every doctor, it matters not whether he lives in a large city or small town, should read and study this report. Of even greater benefit would be for local and district medical societies to appoint someone to review this report and bring certain phases of it up for discussion at a regular meeting of the organization.

Georgia was well represented in formulating answers to many of the questions which were submitted.

Copies of this publication are available for physicians at the library of the Fulton County Medical Society and also at the Calhoun Library at Emory University Hospital.

The medical profession of Georgia could spend a good deal of time in studying this report because many of the problems discussed are in keeping with the recommendations made by the sub-committee of Medical Economics at the last session of the MEDICAL ASSOCIATION OF GEORGIA.

JAMES E. PAULLIN, M.D.

The annual Conference of Health Officers and Public Health Nurses will be held at the Grand Union Hotel, Saratoga Springs, New York, June 22-24, 1937.

REGULATIONS TO BE OBSERVED IN THE CRAWFORD W. LONG PRIZE CONTEST

The Crawford W. Long Prize is donated for original work, with the purpose of encouraging such endeavor by the physicians in the country districts as well as by his conferees in the city. We wish to impress the fact that all physicians who may compete will have the same consideration, and the committee welcomes essays from all sections of the State. This prize, through the interest of a generous donor, will be presented yearly if sufficient interest be manifested, and worthy essays are presented.

1. The essayist must be a member in good standing in the Medical Association of Georgia.

2. The essay must be presented before the regular annual session of the Medical Association of Georgia, by the essayist himself and at the time appointed by the program committee. Otherwise it will be disqualified.

3. The essayist must specifically state that he is a contestant for the Crawford W. Long Prize for original work and must indicate specifically in his essay what he claims to be original. This may be done after the convention and in a note to the committee.

4. The essays and essayists are subject to the rules and customs observed by the program committee, especially as to notifying the committee of your title and intention to read a paper by expiration date fixed by them, and as to the time limit allowed in presenting paper. It is also understood that the essay will be published in the Journal of the Medical Association of Georgia. However, the committee will agree that it may be published elsewhere also.

5. The essays must show original work.

6. Essays must be of sufficient merit. Decision rests with the committee. If there be no essay of sufficient merit, the prize will not be presented.

7. After essayist has read his essay before the session of the Medical Association, he will send five complete copies of it to the Chairman of this committee in order that each member of the committee may independently examine and pass his opinion upon the value of the essay.

8. The decision of the committee will be reached after careful study and due consideration of the manuscripts of the several essays. This decision will be published in the JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA, at the discretion of the committee.

9. The decisions rendered by the committee are final.

The prize will be presented by the committee at the banquet or any suitable session of the Association during the annual convention following the reading of the essay and the decision of the committee.

WILLIAM R. DANCY, *Chairman*
Crawford W. Long Memorial
Prize Committee.

102-4 Jones St. West
Savannah.

MEDICAL ASSOCIATION OF GEORGIA OFFICERS AND COMMITTEES 1937-1938

EIGHTY-NINTH ANNUAL SESSION, AUGUSTA

MAY 10, 11, 12, 13, 1938

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President-Elect..... Grady N. Coker, Canton
First Vice-President..... C. Hall Farmer, Macon
Second Vice-President..... Hulett H. Askew, Atlanta
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Parliamentarian..... John W. Simmons, Brunswick

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William H. Myers (1937-8)..... Savannah
Alternate, Wm. A. Mulherin..... Augusta
Chas. W. Roberts (1937-8)..... Atlanta
Alternate, Marion C. Pruitt..... Atlanta
Olin H. Weaver (1938-9)..... Macon
Alternate, C. K. Sharp..... Arlington

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MEDICAL ASSOCIATION OF GEORGIA

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9. C. B. Lord (1938) Jefferson
10. S. J. Lewis (1938) Augusta

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 Jack C. Norris Atlanta
 C. E. Lawrence Atlanta

*This Committee is subject to the call of the Chairman of the Committee on Medical Economics.

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*Prize for Hookworm Control**

W. F. Reavis, Chairman	Waycross
E. F. Wahl	Thomasville
H. M. Tolleson	Eastman

*Award by the Ware County Medical Society.

Study of Maternal Mortality and Infant Deaths

H. F. Sharpley, Jr., Chairman	Savannah
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A. J. Mooney	Statesboro
A. J. Waring	Savannah

Second District

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Third District

Herschel A. Smith	Americus
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Fourth District

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Fifth District

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P. O. Chaudron	Cedartown
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M. E. Winchester	Brunswick
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Ninth District

Pratt Cheek	Gainesville
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Tenth District

S. S. Smith	Athens
John W. Thurmond, Jr.	Augusta

ex officio

T. F. Abercrombie, Director, Department of Public Health for Georgia	Atlanta
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*Fraternal Delegate to the
Georgia Dental Association*

R. Hugh Wood	Atlanta
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*Fraternal Delegate to the
Georgia Pharmaceutical Association*

Glenville Giddings	Atlanta
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Fraternal Delegates to Other State Meetings

TO VISIT ALABAMA: Wallace H. Clark, La-Grange; Steve P. Kenyon, Dawson.

TO VISIT FLORIDA: Wm. Willis Anderson, Atlanta; Wm. R. Dancy, Savannah; T. C. Davison, Atlanta; Arthur G. Fort, Atlanta.

TO VISIT NORTH CAROLINA: Clarence L. Ayers, Toccoa; Linton Gerdine, Athens.

TO VISIT SOUTH CAROLINA: H. M. Michel, Augusta; Wm. A. Mulherin, Augusta.

TO VISIT TENNESSEE: Richard Binion, Milledgeville; D. L. Wood, Dalton.

Among many other reasons why compulsory health insurance has failed in Europe, where the number of patients visiting a doctor run as high as 60 to 100 per day, are: "A pat on the back, a stock prescription, and out the door." There is no time to know the patient, to observe him at ease, when worried, when angry. How to apply the art of medicine to the peculiar requirements of each patient requires that the doctor have plenty of time to give each person.—*Public Relations Bureau, Med. Society of the State of N. Y.*

ALEXANDER MEANS*

HON. H. Y. McCORD, SR.
Atlanta

No more able man has lived and labored in Georgia than Dr. Alexander Means, who was born in Statesville, N. C., Feb. 6, 1801, and died at his home in Oxford, Ga., in 1883.

He was of Scotch-Irish parentage, from which stock many of our greatest men have descended.

His early educational advantages in the home of his parents, first at Statesville and later at Wilkesboro, N. C., were limited, but he improved all well, and laid the foundation for extensive culture and wide usefulness in the future.

After the death of his dear mother at Wilkesboro, N. C., he came to Georgia, making a good part of the journey with a friend in a common road wagon.

He came first to Morgan County, where friends gave him their endorsement and soon he obtained a school in Green County which he taught for a year. He taught later in Madison, giving great satisfaction to his patrons.

At about 25 years of age he abandoned teaching to study medicine under Drs. Walker and Randall at Madison. In the autumn of 1825 he went to Transylvania College in Lexington, Ky., to attend a course of lectures, making the journey of 450 miles on horseback. After graduation in medicine he practiced the profession one year in Putnam County, and then moved to Covington to accept a partnership with Dr. Henry L. Gaither.

In May, 1828, he was licensed to preach at a quarterly conference near Monroe in Walton County. He was deeply interested in the cause of Christian education and when the Methodists of Georgia established a manual labor school at Covington in 1833 he was elected its first president. Thereafter he abandoned the profession of medicine and devoted his energies to the gospel ministry and Christian education.

He was active in the establishment of Emory College at Oxford, Ga., and in the

fall of 1838, when the first college classes were organized, he was elected Professor of Natural Science. For more thorough preparation for the work of his professorship he spent the winter of 1838-39 in attendance of two courses in medicine, one at Louisville, Ky., and the other at Jefferson Medical College in Philadelphia.

Dr. Means filled the chair of Natural Science at Emory for eighteen years, and when Dr. George F. Pierce, President of the College, was elected Bishop in 1854, he was elected President and served one year.

But he did not like executive duties and soon he returned to his work as Professor of Natural Science. He believed religion and education to be inseparable, and this idea dominated all his public life.

In 1840 at the earnest solicitation of the trustees of the medical college in Augusta, and with the consent of the trustees of Emory College at Oxford, he filled the chair of Chemistry in the former institution; and held the chair for nineteen years while still toiling in the work at Emory College. Early in 1851, his health having failed, he made a visit to Europe where he stayed for the greater part of a year.

In 1853 he was elected President of the Masonic Female College at Covington, in which office he served one year.

In 1855 he was elected to the chair of General and Medical Chemistry in the Atlanta Medical College, in which position he served for twelve years.

While in Europe he was presented with the famous bell, now in the tower of Seney Hall at Oxford, by one of the royal family, whom he greatly impressed by his learning and eloquence.

In 1854 the degree of Doctor of Divinity was conferred upon him by Emory College, and in 1878 the degree of LL.D. was conferred upon him by the same college which he loved so well and served so faithfully.

In many of his lectures at Emory College he predicted that eventually the electric current would be applied to both illumination and transportation, although at that time his view of the subject was rejected by the most conspicuous scientists of his day, including Herbert Spencer, who ridiculed it in

*Address at presentation of portrait of Alexander Means to Emory University.

WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, LaGrange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

INSTALLATION OF NEW OFFICERS

Mrs. Ralph H. Chaney, of Augusta, was installed as president at the final session of the State convention, held in Macon May 11-13, and Mrs. Warren A. Coleman, of Eastman, was named president elect.

Other officers include Mrs. H. G. Banister, of Ila, first vice president; Mrs. J. Lon King, of Macon, second vice president; Mrs. R. S. O'Neal, of LaGrange, third vice president; Mrs. Cleveland Thompson, of Millen, recording secretary; Mrs. W. E. Matthews, of Augusta, corresponding secretary; Mrs. W. A. Selman, of Atlanta, treasurer; and Mrs. Clem Brannen, of Moultrie, historian.

A full account of the deliberations of the convention will be published in the next issue of the *Journal*.

National President Visits Atlanta

Atlanta Auxiliary members had the pleasure of meeting Mrs. Robert E. Fitzgerald, of Wauwatosa, Wis., president of the Woman's Auxiliary to the American Medical Association, when she visited Mrs. J. Bonar White, her chairman of public relations for the national group, during April. Mrs. Fitzgerald had been attending the Florida convention and was on her way to the one in South Carolina. During her stay here she made many friends for the Auxiliary and its work, her enthusiasm being such that it spurred each member on to greater effort.

Mrs. William R. Dancy, of Savannah, at that time president of the Woman's Auxiliary to the Medical Association of Georgia and Mrs. W. H. Myers, of Savannah, a past president, visited Mrs. Marion Benson at the same time and were also honored at numerous informal affairs. The visitors proved inspirations for a round of social affairs, one of these being the tea at which the Woman's Auxiliary to the Fulton County Medical Society entertained at the home of its president, Mrs. Charles Boynton. Many members of the state executive board were in Atlanta during her stay to meet Mrs. Fitzgerald.

Through the *Journal*, Mrs. Fitzgerald is sending the following message to Georgia

Auxiliary members: "It has been a real pleasure to visit Atlanta and meet so many interested Auxiliary members. The opportunity of meeting with a large number of the State Auxiliary officers and chairmen has compensated, to some degree, for the fact that I was unable to accept your gracious invitation to attend the State meeting in Macon. I wish it were possible for me to meet every member of the Auxiliary in Georgia and thank each one for the excellent accomplishments of her organization. It is my sincere hope that every doctor's wife in your county and your State will realize the advantages of being an Auxiliary member and will avail herself of the privilege of membership."

President of Southern Visits Atlanta

Mrs. Frank N. Haggard, of San Antonio, Texas, president of the Woman's Auxiliary to the Southern Medical Association, also visited in Atlanta during April, being the guest of Mrs. J. Bonar White, a former president of that body. Mrs. Haggard, who had attended the South Carolina convention, was en route to Birmingham for the Alabama gathering. She, like Mrs. Fitzgerald, charmed all the Auxiliary members who had the privilege of meeting her. Several informal social affairs, including a small tea at the home of Mrs. Charles Boynton, president of the Fulton County Auxiliary, honored Mrs. Haggard. She expressed the hope that all Georgia members would attend the Southern Medical Auxiliary Convention in New Orleans Nov. 30, Dec. 1-2.

Richmond County

The Woman's Auxiliary to the Richmond County Medical Society has held two interesting meetings recently, at one of which officers were elected. New officers are: Mrs. C. M. Burpee, president; Mrs. H. G. Mealing, first vice president; Mrs. R. C. McGahee, second vice president; Mrs. Lombard Kelly, third vice president; Mrs. W. W. Battey, historian; Mrs. J. V. Roule, treasurer; Mrs. Richard Torpin, corresponding secretary, and Mrs. Robert Greenblatt, recording secretary.

The March meeting was held at the Doughty Nurses' Home and was featured by the installation of officers and a talk by Dr. W. W. Battey, Jr. The April meeting, at which time Dr. Robert Crichton made a talk, was held at the home of Mrs. Lombard Kelly.

Fulton County Auxiliary

Two interesting programs were given at the March and April meetings of the Woman's Auxiliary to the Fulton County Medical Society at the Academy of Medicine in Atlanta. At the March meeting Mrs. Myers and Mrs. Greenblatt, members of the board of the Victor Kreighshaber Memorial Lighthouse, talked most interestingly on this wonderful cause. Mrs. Eustace Allen, state chairman of the Jane Todd Crawford Memorial, presented this in an instructive light at the April meeting. A nominating committee, to present the slate of new officers, was elected. Luncheon followed both meetings, over which the president, Mrs. Charles Boynton, presided.

Tri-County Auxiliary

At Millen Community House the Auxiliary to the Tri-County Medical Society, composed of members from Jenkins, Burke and Screven Counties, entertained the members of the Medical Society with a buffet supper in honor of Doctor's Day.

Mrs. Cleveland Thompson presided at the meeting and introduced the program, which included a skit, "The Doctor's Exchange," impersonations of the doctors of the society by Misses Jane Mulkey and Jane Simpson, and a reading, "My Doctor," by Esther Lee.

Games and contests were directed by Mrs. W. W. Hillis of Sardis.

Mrs. L. Fielding Lanier, of Sylvania, is president of the Tri-County Auxiliary.

Georgia Medical Society

A lovely supper and dance was given by the Woman's Auxiliary to the Georgia Medical Society for its members. The entertainment was held at the Shrine Country Club on Doctor's Day, March 30th.

Mrs. Lehman Williams and Mrs. Wm. H. Myers were chairmen in charge of the observance.

"An Hour of Fun and Frolic" was the feature program planned with the assistance of Dr. Ruskin King, consisting of talent of a wide variety secured from the society. Dramatic recitations, quartets, sextets, instrumental solos and humorous readings had a place in the entertainment.

Flowers and greetings were sent doctors who were ill.

Annual Meeting

At the annual meeting of the Woman's Auxiliary to the Georgia Medical Society, held on April 2 at the home of Mrs. J. Reid Broderick, Mrs. A. A. Morrison was re-elected president of the Auxiliary. Other officers elected were: Mrs. Lehman Williams, first vice president; Mrs. Elliott Wilson, second vice president; Mrs. John Elliott, corresponding secretary; Mrs. John Daniel, Sr., recording secretary, and Mrs. Shelton Sanford, treasurer.

Mrs. L. W. Williams and Mrs. S. P. Sanford were named delegates to the State Convention, with Mrs. G. Hugo Johnson and Mrs. John Daniel, Jr., as alternates.

Mrs. Charles Usher read a paper on "The Life of Jane Todd Crawford." Mrs. Wm. R. Dancy, State President, addressed the assembly. Mrs. J. Reid Broderick sang several selections. Hostesses for the meeting were Mrs. J. Reid Broderick, Mrs. John Daniel, Jr., and Mrs. W. O. Bedingfield.

ALEXANDER MEANS

(Continued from Page 241)

his work on education. Now, his prediction has been fulfilled, and cities around the world are illuminated by electricity, and every form of motion and transportation is conducted by the electric current. Not a factory in Georgia is now run by any other source than electricity, although the possibility of such a thing was derided when Dr. Means made his famous prediction.

As physician, scientist, preacher of the Gospel and great educator, he distinguished himself in every field in which he labored.

As a preacher his reputation extended to national and international bounds. When the great Wilbur Fisk, President of Wesleyan University at Middletown, Conn., died, Dr. Means preached his funeral at the request of the family; and when President Zachary Taylor died he rendered a similar service at the funeral of that great military leader and President.

Above all his attainments, however, his manhood rose to heavenly heights. He was first of all, and most of all, a great man; and when he passed away, at his home in Oxford, his church, state and country sustained a great loss.

It is a great privilege and pleasure to present his portrait to the Medical School of Emory University. I hope it will be hung in the halls of the University where students will revere his memory.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

THE NEW INSTITUTE OF RABIES RESEARCH

Does a single subcutaneous injection of antirabic canine vaccine protect a dog against rabies? Assuming that protection is thus afforded, how long does it persist? If the protection is only partial, would two or more injections increase it? Is the present method of preparing the vaccine satisfactory? Which of the several methods of preparing and administering prophylactic antirabic treatment for humans is most efficient? In protecting man, how quickly does the treatment produce adequate immunity? How long does it last? Is there more than one strain of rabies virus in nature, varying in virulence and infectivity? These are only a few of the many questions regarding rabies which remain to be answered with definite certainty.

Rabies is a virus disease. Unlike bacteria viruses they cannot be seen microscopically, nor can they be grown in artificial culture media. All of our present knowledge of rabies virus has been gained through observation of its behavior in animals. Many difficulties attend such methods of study. Some of these are:

1. Rabies is transmitted in nature chiefly by the bite of an actively infected animal. It is, therefore, exceedingly difficult to reproduce natural infections experimentally in the laboratory.

2. When animals, such as the dog, the rabbit or the guinea pig are inoculated in a manner simulating nature, they vary widely in their individual responses and their reactions are difficult to correlate.

3. The incubation period in the commonly used test animals varies widely. Hence any determination requires a long period of time.

4. Due to variations in the animal and in the incubation period, large numbers of animals must be employed to gain conclusive results. Therefore the expense is almost prohibitive.

Recently Dr. L. T. Webster of the Rockefeller Institute has sought to apply to the study of rabies certain technic developed by some of his coworkers in the study of other viruses, such as smallpox, yellow fever and encephalitis. In working with these viruses certain strains of laboratory mice were found to behave much more uniformly in their susceptibility and reactions than rabbits or guinea pigs. Webster soon found this to be

true also as applied to rabies virus. Also he found that the incubation period in mice was very short and regular, being about seven days. Having thus found a satisfactory test animal he undertook to devise new methods of study which promise to untangle many of the problems regarding rabies. With these new methods Webster in a remarkably brief period of time has produced evidence indicating that:

1. A much more reliably early diagnosis in suspected animals can be made by the mouse inoculation test than by Negri body demonstration.

2. It is possible to measure quantitatively protective substances in the blood of vaccinated animals and humans.

3. The duration of protection may be measured.

4. The relative efficiency of vaccine containing living and dead viruses can be determined comparatively.

5. The intraperitoneal route of inoculating vaccine is much more effective in protecting animals than by the subcutaneous route now employed.

6. The blood of dogs receiving a single injection of antirabic canine vaccine shows no protective substance.

7. Rabies virus will grow in tissue culture (in vitro). It may, therefore, be possible to make a vaccine from such cultures, free of nerve tissue.

The Rockefeller Foundation has become interested in Webster's results and has established a research rabies laboratory at Montgomery, Ala. This laboratory is fully equipped with every modern appliance necessary. Highly trained technicians have been employed. Dr. Charles N. Leach, a man of wide experience and for many years on the staff of the Foundation, will be in charge. Dr. Leach has already begun operations and is at present engaged in testing out the new mouse inoculation method of diagnosing rabies in animals. In this project the State Health Departments of Alabama and Georgia are furnishing the test material. Dr. Leach is also measuring the degree of protection furnished by various animal and human prophylactic treatments. The efficiency of canine antirabic vaccine will be studied on a large scale.

The Rockefeller Foundation has committed itself to the most scientific and thorough research program on rabies ever attempted in

this country. No expense will be spared and the work will be continued for several years at least. Enlightenment is certain to follow. The State Department of Health of Georgia is planning to lend all assistance possible to this very important project, and to utilize any new knowledge thus gained to the fullest extent in the control of rabies. The State

Department of Agriculture as well as the Georgia Association of Veterinarians have promised enthusiastic support. The medical profession also can render valuable assistance. Reports on the progress of the work will be made from time to time.

T. F. SELLERS, M.D., *Chief
Division of Laboratories.*

MEMBERS OF THE MEDICAL ASSOCIATION OF GEORGIA

Registered at the Eighty-Eighth Annual Session, Macon, May 11, 12, 13, 14, 1937

A
Abercrombie, T. F., Atlanta
Abram, Lewis, Fitzgerald
Adams, A. N., Atlanta
Adams, B. C., Thomaston
Adams, Charles, Cordele
Adams, Tom, Montezuma
Agee, M. P., Augusta
Alden, Herbert, Atlanta
Aldrich, F. N., Macon
Alexander, Geo. H., Forsyth
Allen, E. W., Milledgeville
Allen, Eustace, Atlanta
Allen, H. D., Jr., Milledgeville
Allen, H. Homer, Decatur
Allen, L. C., Hoschton
Allison, Gordon G., Atlanta
Anderson, Carl L., Macon
Anderson, J. C., Macon
Anderson, J. T., Atlanta
Anderson, Wm. Willis, Atlanta
Andrews, Chas. R., Jr., Canton
Applewhite, J. D., Macon
Arnold, J. T., Parrott
Askew, Hulett H., Atlanta
Askew, P. H., Jr., Nashville
Atkinson, H. C., Macon
Ault, H. J., Dalton
Aven, C. C., Atlanta
Avera, J. B., Brunswick
Ayer, G. D., Atlanta
Ayers, A. J., Atlanta
Ayers, C. L., Toccoa

B
Baggett, L. G., Atlanta
Baird, J. Mason, Atlanta
Baker, J. Pope, Atlanta
Ballenger, E. G., Atlanta
Banister, H. G., Ila
Barfield, Forrest M., Atlanta
Barfield, Hugh H., Atlanta
Barfield, J. R., Atlanta
Barker, H. E., Dahlonega
Barnett, J. M., Albany
Barnett, S. T., Jr., Atlanta
Barrett, Clara B., Atlanta
Barrow, Craig, Savannah
Barrow, H. L., Macon
Bashinski, Benjamin, Macon
Bateman, Needham B., Atlanta
Baxley, W. W., Porterdale
Baxter, J. H., Ashburn
Baylis, E. A., Atlanta
Bazemore, Wallace L., Macon
Beard, J. S., Edison
Beasley, B. T., Atlanta
Bedingfield, W. O., Savannah
Belcher, F. S., Monticello
Bell, J. A., Dublin
Bell, Rudolph, Thomasville
Bennett, John L., Trion

Benson, Marion T., Jr., Atlanta
Benson, Marion T., Sr., Atlanta
Bickerstaff, H. J., Columbus
Binion, Richard, Milledgeville
Bishop, E. L., Atlanta
Blackburn, Jno. D., Thomaston
Blackford, L. Minor, Atlanta
Blackmar, F. B., Columbus
Blakey, M. W., Decatur
Blanchard, Mercer, Columbus
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Bowdoin, C. D., Atlanta
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Brawner, Jas. N., Atlanta
Brawner, Jas. N., Jr., Atlanta
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Brittingham, Jno. W., Augusta
Broadrick, G. L., Dalton
Brooks, Henry W., Buena Vista
Brown, Lester A., Atlanta
Brown, S. Ross, Atlanta
Brown, Stephen T., Atlanta
Brown, Walter, Savannah
Bunce, Allen H., Atlanta
Burford, R. S., Brunswick
Burgess, Taylor S., Atlanta
Burke, B. Russell, Atlanta
Burns, J. K., Gainesville
Burpee, C. M., Augusta
Bush, A. R., Hawkinsville
Byne, J. M., Jr., Waynesboro
Byrd, T. L., Atlanta

C
Cabaniss, W. H., Athens
Cain, Sylvester, Jr., Norcross
Calhoun, F. Phinazy, Atlanta
Callaway, Enoch, LaGrange
Camp, J. A., Roberta
Camp, M. N., Augusta
Camp, R. T., Fairburn
Campbell, J. L., Atlanta
Campbell, Wm. E., Jr., Atlanta
Carter, J. G., Scott
Cason, W. M., Sandersville
Cathcart, Don F., Atlanta
Champion, W. L., Atlanta
Chaney, Ralph H., Augusta
Chason, Thomas, Donalsonville
Cheek, O. H., Dublin
Cheek, Pratt, Gainesville
Cheves, H. L., Union Point
Chisholm, Julian F., Savannah
Chrisman, W. W., Macon
Churchill, C. W., Thomson

Clements, H. W., Adel
Clairborne, T. S., Atlanta
Clark, Jas. J., Atlanta
Clifton, Ben H., Atlanta
Cline, B. McH., Atlanta
Claxton, E. B., Dublin
Clay, Grady E., Atlanta
Clay, J. Emory, Macon
Clodfelter, T. C., Eatonton
Coffee, W. P., Fitzgerald
Coker, Grady N., Canton
Coker, N. J., Canton
Coleman, Warren A., Eastman
Coleman, Y. R., Macon
Collins, Thos. W., Albany
Collinsworth, A. M., Atlanta
Colvin, E. D., Atlanta
Cone, R. L., Statesboro
Cook, Wm. C., Columbus
Cook, W. S., Albany
Cooke, Wm. L., Columbus
Copeloff, M. B., Atlanta
Corn, Ernest, Macon
Corry, J. A., Barnesville
Coward, J. W., Walden
Cranston, W. J., Augusta
Crawford, H. C., Atlanta
Crawley, W. G., Jr., Acworth
Crichton, Robert B., Augusta
Cross, Jno. B., Atlanta
Crow, H. E., Alto
Crumbley, J. S., Sylvania

D
Dancy, Wm. R., Savannah
Daniel, Chas. H., College Park
Daniel, J. W., Jr., Savannah
Darden, Holt, Blakely
Darden, Horace, Sparta
Davison, T. C., Atlanta
Davison, Hal M., Atlanta
Davidson, A. A., Augusta
Davis, Abe., Waynesboro
Davis, A. W., Warrenton
Davis, B. B., Gainesville
Davis, Edgar B., Byromville
Demmond, E. C., Savannah
Denit, G. B., Atlanta
Denton, Jno. F., Atlanta
Derrick, H. C., Oglethorpe
Dew, J. Harris, Atlanta
Dimmock, Avary, Atlanta
Dickson, Roger W., Atlanta
Dougherty, Mark S., Jr., Atlanta
Dove, W. B., Macon
Downey, J. H., Gainesville
Drane, Robert, Savannah
DuPree, Geo. W., Gordon
Durham, W. P., Abbeville
DuVall, Beecher, Atlanta
Dykes, A. N., Columbus

E

Echols, Geo. L., Milledgeville
 Eberhart, C. A., Atlanta
 Egbert, Edward H., St. Simons Island
 Edgerton, M. T., Atlanta
 Edmondson, H. T., Moultrie
 Ellis, S. B., Pitts
 Emery, W. B., Atlanta
 Estes, H. G., Atlanta
 Eubanks, Geo. F., Atlanta
 Evans, E. L., Tifton
 Evans, H. E., Perry

F

Fancher, J. K., Atlanta
 Farmer, C. Hall, Macon
 Farmer, Frampton, Macon
 Ferguson, I. A., Atlanta
 Ferrell, R. G., Jr., Dublin
 Ferrell, Thos. J., Waycross
 Fischer, L. C., Atlanta
 Fitts, Jno. B., Atlanta
 Fleming, Carlton A., Tifton
 Floyd, Earl, Atlanta
 Floyd, Walter E., Statesboro
 Fort, Arthur G., Atlanta
 Fountain, Jas. A., Macon
 Fowler, A. H., Marietta
 Fowler, R. W., Marietta
 Franklin, R. C., Swainsboro
 Fulghum, Chas. B., Milledgeville
 Fuller, Geo. W., Atlanta
 Funkhouser, W. L., Atlanta

G

Gaines, Lewis M., Atlanta
 Gallemore, J. L., Macon
 Garner, J. E., Atlanta
 Garner, Jno. P., Atlanta
 Garrard, J. I., Milledgeville
 Garrard, J. L., Rome
 Garrett, Jno. A., Meigs
 Gary, Loren, Jr., Shellman
 Gay, J. Gaston, Atlanta
 Gay, T. Bolling, Atlanta
 Gausemel, S. D., Atlanta
 Gewinifer, N. G., Macon
 Gholston, W. D., Danielsville
 Giddings, Glenville, Atlanta
 Gilbert, R. B., Greenville
 Golsan, Willard R., Macon
 Goodpasture, W. C., Atlanta
 Goodwin, H. J., Douglas
 Goodwyn, H. J., Carrollton
 Goodwyn, Thos. P., Atlanta
 Goolsby, R. C., Jr., Macon
 Goolsby, R. C., Sr., Forsyth
 Gray, J. D., Augusta
 Green, A. J., Union City
 Green, J. A., Clayton
 Greene, Ed H., Atlanta
 Greer, Chas. A., Oglethorpe
 Greer, C. B., Brunswick
 Griggs, H. E., Conyers
 Gross, O. S., Vidalia
 Grove, E. W., Gainesville

H

Hagood, M. M., Marietta
 Hailey, Howard, Atlanta
 Hall, Jno. I., Macon
 Hall, O. D., Atlanta
 Hall, Thos. H., Macon
 Hallum, Alton V., Atlanta
 Hamm, W. G., Atlanta
 Hanson, J. F., Macon
 Harbin, Lester, Rome

Harbin, R. M., Jr., Rome
 Harbin, William, Jr., Rome
 Hardman, C. T., Tallulah Falls
 Harper, G. T., Dewy Rose
 Harper, Harry T., Eastman
 Harper, Sage, Wray
 Harrell, Chas. T., Atlanta
 Harrell, H. P., Augusta
 Harris, M. M., Atlanta
 Harris, V. L., Pinehurst
 Harris, W. P., Hampton
 Harrison, M. T., Atlanta
 Harrold, Chas. C., Macon
 Harrold, Thomas, Macon
 Haslam, J. E., Fort Valley
 Harvard, V. O., Arabi
 Hatcher, Milford B., Augusta
 Hattaway, J. C., Jr., Edison
 Head, Marvin M., Zebulon
 Helton, B. L., Sandersville
 Hembree, M. D., Douglas
 Hendry, G. T., Blackshear
 Hendricks, W. H., Tifton
 Henry, C. G., Augusta
 Hensley, E. A., Gibson
 Herman, E. C., LaGrange
 Highsmith, E. D., Atlanta
 Hill, Roy A., Thomasville
 Hilsman, A. H., Albany
 Hitchcock, J. P., Augusta
 Hobby, A., Worth, Atlanta
 Hodges, J. H., Hapeville
 Hodgson, Fred G., Atlanta
 Holder, Frank, Milledgeville
 Holder, J. S., LaGrange
 Holmes, Champ, Atlanta
 Holmes, J. P., Macon
 Holmes, L. P., Augusta
 Holmes, Walter R., Atlanta
 Holton, C. F., Savannah
 Howard, Lee, Savannah
 Howell, Stacy C., Atlanta
 Houser, F. M., Macon
 Hunt, Kenneth S., Griffin

J

Jackson, J. L., Manchester
 Jackson, T. W., Manchester
 Jardine, Dan O., Augusta
 Jarrett, W. D., Macon
 Jernigan, C. S., Sparta
 Jernigan, H. W., Atlanta
 Joiner, Hartwell, Gainesville
 Joiner, R. M., Moultrie
 Jones, Jack W., Atlanta
 Johnson, A. M., Valdosta
 Johnson, J. E. L., Roberta
 Johnson, Ralph N., Rome
 Johnson, Trimble, Atlanta
 Johnston, Z. V., Calhoun
 Jordan, W. P., Columbus

K

Kay, Jas. B., Byron
 Keaton, J. C., Albany
 Keen, O. F., Macon
 Kelley, D. C., Lawrenceville
 Kelley, L. H., Atlanta
 Kelly, G. Lombard, Augusta
 Kemper, C. G., Atlanta
 Kennedy, R. L., Metter
 Kenyon, Steve P., Dawson
 King, J. L., Macon
 King, John T., Thomasville
 King, O. D., Bremen
 King, Ruskin, Savannah
 Kirkland, Spencer A., Atlanta
 Kitchens, S. B., LaFayette
 Kite, J. H., Atlanta

L

Lake, Wm. F., Atlanta
 Lancaster, E. M., Shady Dale
 Lancaster, H. H., Clermont
 Landham, J. W., Atlanta
 Lange, J. Harry, Jr., Atlanta
 Laws, C. L., Atlanta
 Leadingham, R. S., Atlanta
 Leaphart, J. A., Jesup
 Lennard, O. D., Tonnille
 Lewis, S. J., Augusta
 Levy, M. S., Augusta
 Lightner, L. L., Ideal
 Linch, A. O., Atlanta
 Little, Arthur D., Thomasville
 Logan, J. C., Plains
 Lowance, M. I., Atlanta
 Lowe, W. R., Midville
 Lundy, L. L., Boston
 Lunsford, Guy G., Atlanta

M

Maddox, Robert C., Rome
 Malloy, M. L., Vienna
 Maloy, C. J., McRae
 Mann, F. R., McRae
 Martin, J. D., Atlanta
 Martin, Jas. J., Atlanta
 Martin, J. W., Macon
 Martin, Wm. O., Jr., Atlanta
 Mashburn, Marcus, Cumming
 Massey, W. F., Chester
 Massenburg, Geo. Y., Macon
 Maulding, H. R., Atlanta
 May, E. R., Lincolnton
 Mays, John R. S., Fort McPherson
 McAfee, L. C., Macon
 McAllister, J. M. C., Rochelle
 McCall, J. T., Rome
 McCarver, W. C., Vidette
 McCord, M. M., Rome
 McCord, Ralph B., Rome
 McCrackin, H. C., Baxley
 McCullough, Kenneth, Waycross
 McCurry, W. E., Hartwell
 McDonald, Harold P., Atlanta
 McDougall, J. Calhoun, Atlanta
 McElroy, S. L., Ocilla
 McElveen, J. M., Brooklet
 McGahee, R. C., Augusta
 McGear, W. C., Madison
 McGee, H. H., Savannah
 McGinty, W. R., Moultrie
 McKemie, H. M., Albany
 McKenzie, J. M., Thomaston
 McLaughlin, C. K., Macon
 McMichael, J. R., Quitman
 McMichael, V. H., Macon
 McMillan, T. J., Milan
 McRae, Floyd W., Atlanta
 Mealing, H. G., Augusta
 Mercer, J. E., Vidalia
 Meriwether, W. W., Macon
 Michel, H. M., Augusta
 Miller, G. T., Macon
 Minchew, B. H., Waycross
 Minnich, F. R., Atlanta
 Minnich, W. R., Atlanta
 Minor, H. W., Atlanta
 Mitchell, Marvin A., Atlanta
 Mitchell, Wm. E., Atlanta
 Mixson, W. D., Waycross
 Mobley, J. W., Jr., Pelham
 Montgomery, R. C., Butler
 Mooney, A. J., Statesboro
 Moore, Henry M., Thomasville
 Moore, R. M., Waleska
 Morrison, A. A., Savannah

Morrison, H. J., Savannah
Mulherin, Phil., Augusta
Mulherin, Wm. A., Augusta
Mulkey, Q. A., Millen
Mull, J. H., Rome
Murphey, Eugene E., Augusta
Myers, Wm. H., Savannah

N

Nabors, Dewey T., Atlanta
Nash, T. C., Philomath
Nevil, J. L., Metter
New, J. E., Dexter
Newman, W. A., Macon
Newsom, N. J., Sandersville
Nicolson, Wm. Perrin, Atlanta
Nippert, Philip H., Atlanta
Norris, Jack C., Atlanta
Nutt, J. J., Bowdon

O

Oden, L. H., Jr., Blackshear
Oliphant, J. B., Adel
Oliver, T. W., Eastman
O'Neal, R. S., LaGrange
Oppenheimer, Russell H., Emory
University

Orr, J. C., Buford
Osborne, V. W., Atlanta
Overby, N., Sandersville
Overstreet, E. J., Baxley
Owens, J. D., Rochelle
Owensby, N. M., Atlanta

P

Palmer, J. W., Ailey
Parkerson, I. J., Eastman
Parkerson, S. T., McRae
Patterson, J. T., Cuthbert
Paulk, James R., Moultrie
Paulin, James E., Atlanta
Peacock, C. A., Columbus
Pendergrass, R. C., Americus
Penland, J. E., Waycross
Pennington, C. L., Macon
Person, W. E., Atlanta
Peters, A. R., Jr., Augusta
Peterson, T. A., Savannah
Pettit, J. T., Canton
Phillips, A. M., Macon
Pierce, L. W., Waycross
Pilcher, J. J., Wrens
Pirkle, W. H., Cochran
Pittard, L. Y., Monticello
Poer, D. Henry, Atlanta
Pomeroy, W. L., Waycross
Porch, Leon D., Macon
Porter, J. L., Rutledge
Primrose, A. C., Americus
Pritchett, D. W., Barnesville
Pruitt, Marion C., Atlanta
Puett, W. W., Norcross
Pund, Edgar R., Augusta

R

Rankin, D. T., Alto
Rawlings, F. B., Sandersville
Rawls, L. L., Macon
Rayle, A. A., Atlanta
Read, Joseph C., Atlanta
Reavis, W. F., Waycross
Redd, Stephen C., Atlanta
Redfearn, J. A., Albany
Reese, D. S., Carrollton
Reid, C. W., Pelham
Revell, S. T. R., Louisville
Rhodes, R. L., Augusta
Richards, W. R., Calhoun
Richardson, Chas. H., Macon

Richardson, R. W., Macon
Ridley, C. L., Macon
Ridley, H. W., Atlanta
Ritch, Thos. G., Jesup
Roberts, C. W., Atlanta
Roberts, O. W., Carrollton
Roberts, Stewart R., Atlanta
Roberts, Will., Atlanta
Robertson, J. Righton, Augusta
Robinson, L. B., Atlanta
Rodgers, J. J., Trion
Rogers, Harry, Atlanta
Rogers, H. A., Jeffersonville
Rogers, J. V., Cairo
Rollins, J. C., Dalton
Roper, C. J., Jasper
Rose, Jno. R., Unadilla
Rosenberg, H. J., Atlanta
Ross, Jas. T., Macon
Ross, Thos. L., Macon
Rouglin, L. C., Atlanta
Rozar, A. R., Macon
Rubin, S. N., Macon
Rushin, C. E., Atlanta
Rushing, W. E., Millhaven

S

Sage, Dan Y., Atlanta
Sams, J. R., Covington
Sanchez, A. S., Eastman
Sanderson, E. S., Augusta
Sandison, Calvin, Atlanta
Sanford, S. P., Savannah
Sauls, H. C., Atlanta
Saunders, Albert F., Valdosta
Sapp, E. F., Albany
Savage, C. P., Montezuma
Saye, E. B., Macon
Schaefer, W. B., Toccoa
Schenck, H. C., Atlanta
Schley, F. B., Columbus
Schneider, J. F., Atlanta
Scott, W. M., Milledgeville
Sellers, T. F., Atlanta
Selman, W. A., Atlanta
Shanks, Edgar D., Atlanta
Sharp, C. K., Arlington
Sharpley, H. F., Jr., Savannah
Shellhorse, E. O., Dalton
Shepard, Walter L., McRae
Siegel, Alvin E., Macon
Simmons, J. W., Brunswick
Simonton, Fred H., Chickamauga
Sinkoe, Samuel, Atlanta
Sloan, W. P., Atlanta
Slocumb, C. B., Doerun
Smaha, T. G., Griffin
Spearman, G. F., Atlanta
Smisson, R. C., Fort Valley
Smith, Allen, Macon
Smith, A. C., Elberton
Smith, Carter, Atlanta
Smith, Geo. B., Rome
Smith, Inman, Trion
Smith, J. M., Valdosta
Smith, M. R., Cordele
Smith, S. D., Byron
Smith, Simon H., Atlanta
Smith, S. S., Athens
Smith, Wm. A., Atlanta
Standifer, J. G., Blakely
Steed, J. H., Dalton
Stewart, P. R., Monroe
Storey, W. Edward, Columbus
Story, J. W., Perry
Story, W. L., Ashburn
Strickler, C. W., Jr., Atlanta
Swanson, Cosby, Atlanta

Swilling, Evelyn, Macon
Swint, Roger C., Atlanta
Suarez, Raymond, Macon
Sydenstricker, V. P., Augusta

T

Talley, R. E., Trion
Taranto, M. B., Atlanta
Taylor, R. L., Davisboro
Taylor, T. B., Thomaston
Teasley, B. C., Hartwell
Temples, A. K., Augusta
Tessier, L. P., Augusta
Thomas, J. W., Augusta
Thomas, N. R., Albany
Thompson, Cleveland, Millen
Thompson, D. N., Elberton
Thompson, J. B., Columbus
Thompson, O. R., Macon
Thurmond, J. W., Augusta
Tidmore, T. L., Atlanta
Tolleson, H. M., Eastman
Torpin, Richard, Augusta
Traylor, Geo. A., Augusta
Trimble, Geo. C., East Point
Trimble, W. H., Atlanta
Turner, John W., Atlanta
Turner, W. W., Nashville
Tyre, J. Lawton, Screven

U

Upchurch, W. E., Atlanta
V
Vansant, T. J., Woodstock
Vickers, T. E., Harrison
Vinson, C. D., Atlanta
Vinson, Frank, Fort Valley
Vinson, T. O., Macon

W

Wahl, E. F., Thomasville
Walden, K. C., Waycross
Walker, D. D., Macon
Walker, Geo. L., Griffin
Walker, Jno. E., Columbus
Wall, C. K., Thomasville
Wall, J. Cox, Eastman
Walton, Jno. M., Atlanta
Ward, Aaron C., Lincolnton
Ward, E. L., New Holland
Ware, D. B., Fitzgerald
Ware, Ford, Macon
Ware, F. L., Warrenton
Ware, R. M., Fitzgerald
Wasden, C. N., Macon
Watson, O. O., Macon
Watt, Chas. H., Thomasville
Waxelbaum, Gates J., Atlanta
Weaver, H. G., Macon
Weaver, O. H., Macon
Wells, W. F., Atlanta
Wheat, R. F., Bainbridge
Whelchel, Cleveland D., Gainesville
Whelchel, F. C., Alto
Whipple, R. L., Cochran
Whittendale, W. H., Norman Park
Williams, L. A., Abbeville
Williams, L. W., Savannah
Williams, T. C., Valdosta
Williams, W. A., Macon
Wilson, Pleas, Newborn
Wilson, Richard, Atlanta
Willis, C. H., Barnesville
Willis, G. W., Ocilla
Willis, T. V., Brunswick
Winchester, M. E., Brunswick
Wise, B. T., Americus
Wise, S. P., Americus
Wood, D. L., Dalton

Woods, O. C., Milledgeville
 Wooten, L. O., Cordele
 Wright, Edward S., Atlanta
 Wright, Peter B., Augusta

Y

Yampolsky, Joseph, Atlanta
 Yarbrough, Y. H., Milledgeville
 Youmans, C. R., Lumber City

Z

Zachary, J. D., Gray
 Zimmerman, W. F., Tifton

INVITED GUESTS

Abt, Isaac A., Professor of Pediatrics, Northwestern University Medical School, Chicago, Ill.
 McClure, Roy D., Henry Ford Hospital, Detroit, Mich.
 Upham, J. H. J., President-elect of the American Medical Association, Dean and Professor of Medicine, Ohio State University College of Medicine, Columbus, Ohio.
 West, Olin, Secretary of the American Medical Association, Chicago, Ill.

DELEGATES AND VISITORS

Britt, Reddin, St. Augustine, Fla.
 Canipelli, Edward, Henry Ford Hospital, Detroit, Mich.
 Coleman, Jno. F., Varnville, S. C.
 Crooks, J. H., Greenville, S. C.
 Daniels, Frank, Greenville, S. C.
 Gay, Clifford J., Starke, Fla.
 Holden, Gerry R., Jacksonville, Fla.
 Hall, S. P., Scottsboro, Ala.
 McGinty, H. C., Walhalla, S. C.
 McCalla, L. H., Greenville, S. C.
 Peacock, W. F., Bartow, Fla.
 Pearson, Homer L., Miami, Fla.
 Rogers, H. B., Miami, Fla.

NEWS ITEMS

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on April 28th. Dr. T. H. Clark, Douglas, read a paper entitled *Treatment of Spider Bite*; Dr. J. G. Crovatt, Douglas, *Cyanosis of the New-Born*.

DR. AND MRS. HAL M. DAVISON, Atlanta, entertained DR. BRET RATNER, New York City, and others at the Piedmont Driving Club on April 28th. Dr. Ratner is recognized as an able pediatrician and allergist and was a guest speaker before the Fifth District Medical Society on April 29th.

DR. W. W. BROWN, Athens, was elected president of the Georgia Public Health Association at a recent meeting held in Atlanta; Dr. M. E. Winchester, Brunswick, re-elected secretary-treasurer.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on April 27th. Dr. Edgar R. Pund, Augusta, read a paper entitled *The Role of Biopsy in the Diagnosis of Venereal Diseases*; discussion was led by Dr. Lee Howard. Dr. Chas. Usher reported a case, *Free Air in the Peritoneal Cavity from Ruptured Appendix*.

THE STAFF MEETING of St. Joseph's Infirmary, Atlanta, was held in the dining room on April 27th. Dr. Stephen Barnett, Jr., reported a case, *Acute Obstruction with Epigastric Tumor*; Dr. M. T. Meyers, *Fractures of the Vertebrae*.

DR. ELIZABETH GAMBRELL, instructor in bacteriology at Emory University School of Medicine, Emory University, was awarded the Howard Taylor Ricketts Prize by the University of Chicago for research and demonstration of new methods of transmission of malaria.

THE WARE COUNTY MEDICAL SOCIETY met at the Y. M. C. A. hall in Waycross on May 5th. Dr. Leo Smith, Homerville, read a paper entitled, *Paranasal Sinuses*; discussed by Dr. B. H. Minchew, Dr. W. C. Hafford and Dr. W. D. Mixson, all of Waycross. Dr. W. L. Pomeroy and Dr. W. C. Hafford, of Waycross, reported cases.

DR. JOHN M. MCGEHEE, Cedartown, will be engaged in post-graduate study of surgery at Tulane University of Louisiana School of Medicine, New Orleans, for about six weeks.

THE COBB COUNTY MEDICAL SOCIETY met at the Marietta Hospital, Marietta, on May 6th. Dr. R.

Hugh Wood, Atlanta, spoke on the *Management of High Blood Pressure*; Dr. W. W. Anderson, Atlanta, discussed *Treatment of High Blood Pressure*.

THE TOOMBS COUNTY MEDICAL SOCIETY met at the New Lyons Hotel, Lyons, on April 27th. Officers were elected for the ensuing year.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met in the office of Dr. C. B. Lord, Jefferson, on May 3rd. Dr. Paul T. Scoggins, Commerce, read a scientific paper.

DR. RICHARD BINION, Milledgeville, has offered as a gift to the government a 25-acre tract of land within the city limits if used as a site for another United States Veteran's Hospital in Georgia.

MEMBERS OF THE LAURENS COUNTY MEDICAL SOCIETY sponsored a chest clinic, April 26th to May 1st. Two hundred forty-nine x-ray examinations were made.

THE CHATHAM-SAVANNAH TUBERCULOSIS ASSOCIATION sponsored an address by Dr. John L. Elliott, Savannah, on *Tuberculosis*. The moving picture, *Behind the Shadows*, was shown.

DR. THOMAS HARROLD, Macon, addressed the students of Mercer University on April 30th on the *Necessity for More Clinics for the Treatment of Cancer*.

DR. R. F. PAYNE, Tifton, held pre-school clinics at the Tift county courthouse on May 17, 18, 19.

THE MUSCOGEE COUNTY MEDICAL SOCIETY met on April 29th. Dr. H. K. Dunham, Cincinnati, Ohio, was an invited speaker and spoke on the *Diagnostic Importance of X-Ray Findings in the Diagnosis of Tuberculosis*.

DR. W. FRANK WELLS, Hapeville, has been elected president of the Inter-City Civitan Club, which includes Hapeville, East Point and College Park.

DR. J. FRED ADAMS, Montezuma, is at Tulane University of Louisiana School of Medicine, New Orleans, taking post-graduate study in x-ray technic.

DR. J. E. LESTER, Marietta, spoke on *Malaria Control* at a meeting of the Douglas County Commissioners in Douglasville on April 16th.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on May 6th. Dr. F. M. Martin, Shellman, read *Memoirs of L. L. Hill*.

THE STAFF MEETING of Emory University Hospital was held on May 3rd. Dr. Geo. H. Cochran and Dr. Lon Grove reported a case of *Perforated Ulcer*, discussed by Dr. Roy R. Kracke. Dr. Joseph Read reported a case of *Cancer of the Gallbladder*, discussed by Dr. Kracke and Dr. Amey Chappell. Dr. M. K. Bailey and Dr. Chas. A. Eberhart reported a case of *Renal Calculus*, discussed by Dr. C. W. Strickler, Jr. Dr. F. P. Parker reported a case of *Congenital Heart Disease*.

THE JOHN D. ARCHBOLD MEMORIAL HOSPITAL, Thomasville, is the recipient of a gift of \$10,000.00 from Mr. Hendon Chubb, a winter resident of Thomasville, for additions and improvements in the x-ray department.

DR. VERNON E. POWELL, DR. C. W. STRICKLER, JR., and DR. EBERT VAN BUREN, all of Atlanta, and DR. HARRY M. KANDEL, Savannah, have been elected to fellowship in the American College of Physicians.

DR. AND MRS. T. H. BRABSON, Cornelia, entertained members of the Habersham County Medical Society and Auxiliary in their home recently.

DR. GLENVILLE GIDDINGS, Atlanta, has been elected a member of the Board of Governors of the American College of Physicians.

THE FULTON COUNTY MEDICAL SOCIETY met at the Academy of Medicine, Atlanta, May 6th. Dr. Jack C. Norris made a *Pathological Report*; Dr. L. Minor Blackford, case report, *Dissecting Aneurysm*; Dr. Jesse H. York, case report, *Visceral Anomalies as a Cause of Mechanical Obstruction*; Dr. Stewart R. Roberts, clinical talk, *Recent Research on Hypertension*; Dr. Wm. Willis Anderson read a paper entitled, *Congenital Lung Cysts, Air Expansile Type—illustrated with Lantern Slides*. The discussion was led by Dr. C. C. Aven, Dr. Frank K. Boland and Dr. Champ H. Holmes.

THE SECRETARY-TREASURER of the Association continues to have requests for the names of physicians to locate in various sections of the State. If interested in a new location, write.

THE DUGAS JOURNAL CLUB of the University of Georgia School of Medicine, Augusta, met on May 17th. Dr. G. W. McCoy, Washington, D. C., Medical Director of the United States Public Health Service, discussed the *Relationship of Epidemiology to Public Health*.

DR. HULETT H. ASKEW, Atlanta, returned recently from New York City, where he took post-graduate study in proctology.

DR. JOHN B. DUNCAN announces the removal of his offices to Suite 517 Doctors' Building, 478 Peachtree Street, N. E., Atlanta.

DR. W. C. HUMPHRIES, formerly of Griffin and Spalding county health officer, has removed to Acworth, his former home.

DR. DUNBAR ROY has resumed his practice in offices in the Grand Theater Building, Atlanta, after recovering from a recent illness.



J. O. ELROD, M. D., Forsyth
1877-1936

OBITUARY

Dr. John Oscar Elrod, Forsyth; member; Atlanta College of Physicians and Surgeons, Atlanta. 1901; aged 59; died in a private hospital at Macon on April 21, 1937. He was a native of Adairsville, Bartow county, and had practiced medicine in Monroe and adjoining counties for thirty-seven years. In boyhood, he possessed a strong personality and congenial disposition which made him a favorite with the youngsters—those traits with his sympathetic understanding and eagerness to serve humanity and determination to see that justice prevailed won hundreds of friends among people whom he contacted during his important career. Dr. Elrod served as major in the Medical Corps of the Georgia National Guard. He served on committee assignments and in offices of the Medical Association of Georgia as follows: Committee on Scientific Work, 1920-21; Committee on Public Policy and Legislation, 1920-21 and 1936-37; Committee on Medical Defense, 1932 to 1937; Cancer Commission, 1931-32; Committee on Health and Public Instruction, 1924-25; Honorary Advisory Board, 1935-36-37; Councilor for the Sixth District, 1916

to 1924; President, 1924-25. For a number of years and until the time of his death, he was a member of the State Board of Medical Examiners. Dr. Elrod was a member of the Monroe County Medical Society, Southern Medical Association, American College of Physicians, American Medical Association and the Forsyth Baptist Church. He was one of the most aggressive and loyal friends of organized medicine, also to his professional, civic and religious duties. It would be hard for anyone not intimately acquainted with him to imagine or estimate the value of such a physician, gentleman and citizen to our State and nation. Surviving him are his widow, two daughters, Mrs. Carlton Mobley, Atlanta; Miss Mildred Elrod, Forsyth; a brother, G. D. Elrod, Atlanta; his mother, Mrs. G. B. Elrod, Adairsville. Funeral services were conducted from the Forsyth Baptist Church by Dr. Aquila Chamblee, Dr. Ben Ingram and Dr. P. F. Davis. Burial was in the city cemetery.

Dr. Hinton James Eve, Augusta; member; University of Georgia School of Medicine, Augusta, 1899; aged 59; died suddenly of heart disease at his home on April 27, 1937. He was a native of Augusta and descended from a line of prominent physicians. The monument on Greene Street, Augusta, was dedicated to his grandfather, Dr. Joseph A. Eve, a physician with an international reputation. Dr. Eve received his early literary education at the Richmond Academy and a collegiate course at the University of Georgia, Athens. Dr. Eve took post-graduate work in New York City and Rochester, Minnesota. He was identified with the civic, political and religious activities of Augusta. He had served on the city council. Dr. Eve had a most likable disposition, made hundreds of friends and enjoyed the confidence of his clientele and the profession to which he devoted his time and talent. He was a member of the Richmond County Medical Society, Tenth District Medical Society, American Medical Association, a member and deacon in the First Presbyterian Church. Surviving him are two sisters, Miss Sarah G. Eve and Mrs. Frank M. Doar. Dr. Excell Fry conducted the funeral services from the residence. Burial was in Magnolia cemetery.

Dr. Jeremiah Dumas Malone, Marietta; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, Maryland, 1884; aged 77, died at the home of his daughter, Mrs. Geo. L. Harrison, Marietta, on April 11, 1937. He was born and reared in Atlanta. Dr. Malone began the practice of medicine in Marietta and continued there until he retired about fifteen years ago. He served as President of the Marietta Trust and Banking Company, member of the city council, member of the First Methodist Church and Chairman of the Board of Stewards for more than forty years. The people of Cobb County recognized him as one of their leading citizens. Surviving him are two daughters, Mrs. Henry S. Cohen, Moultrie, and Mrs. Geo. L. Harrison, Marietta; one son, J. D. Malone, Jr., Moultrie. Funeral services were conducted from the First Methodist church by Rev. T. Z. B. Everton and Rev. J. H. Patton. Burial was in the city cemetery.

Dr. Beverly Wood Yawn, Eastman; member; Eclectic Medical College, Cincinnati, Ohio, 1911; aged 51; died on May 4, 1937. He was a native of Telfair County. Dr. Yawn practiced medicine at Milan, Alamo and McRae, then removed to Eastman thirteen years ago where he practiced until ill health limited his work and recently forced him to abandon his work. While he did a general practice, he was recognized as an experienced diagnostician. Dr. Yawn enjoyed an extensive practice and had many warm personal friends. He served in the Medical Corps of the United States Army at Camp Greenleaf during the World War, and was a member of the Methodist Church. Surviving him are his widow, one son, Hal; two brothers and five sisters. Funeral services were conducted by Rev. Hartsfield from the chapel of J. W. Peacock Company. Interment was in Woodlawn cemetery.

Dr. Nathaniel C. Goss, Ellijay; member; Southern Medical College, Atlanta, 1890; aged 75; died at his home on April 29, 1937. He had practiced medicine for more than forty years, was a successful physician and had numerous friends. Dr. Goss was interested in the public welfare of his community and a devoted Christian. He was a member of the Blue Ridge Medical Society, Ninth District Medical Society and the Methodist Church. Surviving him are his widow, two half brothers, W. M. Mashburn, Ellijay, and Tom Mashburn, Moultrie. Rev. T. J. Branson conducted the funeral services from the Methodist Church.

Dr. James W. Jones, Thrift; member; University of Georgia School of Medicine, Augusta, 1892; aged 71; died at his home from the effects of a black widow spider bite on May 18, 1937. He was a retired physician and one of the leading citizens of Jenkins County. Surviving him are his widow and one sister. Funeral services were conducted from the Hebron Baptist Church near Garfield. Burial was in the churchyard.

BOOK REVIEW

Physical Diagnosis. By Ralph H. Major, M.D. W. B. Saunders Co., Philadelphia, Pa. The author states that he has attempted to write a book on physical diagnosis and not an encyclopedia on medicine. He emphasizes the fact that physical signs are a result of physical causes. While not decrying the use of modern laboratory methods he feels that the student should first learn to make use of inspection, palpation, percussion and auscultation and that skill in diagnosis may be acquired only by him who would take the necessary time to carefully examine his patient. The book is well arranged, is of convenient size and is written in a pleasing, entertaining style. Its usefulness is further enhanced by some four hundred and seventy illustrations. In all it is an excellent book, especially for the student who wishes to get the proper start in the study of physical diagnosis.

C. M. WEST, M.D.

STATE DEPARTMENT OF PUBLIC HEALTH

*Despite Paucity of Finances, Record Shows
Great Progress.*

PART I.

The first record of any law pertaining to public health in Georgia was passed in 1732, appropriating 13 guineas for the relief of the sick and child-bearing women during passage to the province.

In 1866, the legislature passed an act for the control of smallpox in Georgia. The power to enforce this law was given to the justice of the inferior court (present judge of the superior court), and the corporate authorities of towns and cities.

In 1875, the legislature passed an act creating a State Board of Health. The law authorized the governor to appoint a physician of experience from each of the then nine congressional districts. These, together with the comptroller general, attorney general and geologist constituted the board.

The members of this board were: J. G. Thomas, M.D., Savannah; B. M. Cromwell, M.D., Albany; G. F. Cooper, M.D., Americus; F. A. Stanford, M.D., Atlanta; G. E. Lussdorf, M.D., Macon; G. W. Holmes, M.D., Rome; H. F. Campbell, M.D., Atlanta; H. H. Carlton, M.D., Athens; M. J. Hammond, attorney-general, Atlanta; W. L. Goldsmith, comptroller-general, Atlanta; George Little, geologist, Atlanta.

Dr. G. S. Thomas was elected president and Dr. V. H. Taliaferro was elected secretary and executive member at a salary of \$1,000 a year. The members received personal expenses while engaged in duties of the State Board of Health. The work consisted of prevention of disease, promotion of public health, and the collection of vital statistics.

Delayed by Fever

A meeting was held in Atlanta on October 10, 1876, all members being present except the secretary, who was delayed in Savannah on account of an epidemic of yellow fever. Doctor Taliaferro made a complete investigation of the origin of this epidemic, and reported that sailors on the "Maria Carlina," who had moved their bedding to a boarding house, brought the fever to Savannah. At that time sanitary conditions in Savannah were very poor and played an important part in the spread of the disease. Cases occurred in Augusta, Brunswick and Macon. On October 30, 1876, the Savannah Morning News stated that 8,000 refugees had left Savannah, and that the loss to the city was over one-half million dollars. The same article stated that Savannah had spent \$120,833 for charity during the epidemic.

No appropriation was made to the State Board of Health for continuation of the work in 1877. Dr. Eugene Foster expressed his opinion of the failure of the legislature to provide funds for the work in his book, "From Memories of Georgia," written in 1877, as follows:

"Utterly devoid of appreciation of the possibilities and economy of a public health service, the Georgia

legislature in 1877, blotted the State Board of Health out of existence by refusing to vote the paltry sum of \$1,500 a year for its maintenance. This one act resulting from shameful ignorance has done more to retard the prosperity of the state than any other act since the establishment of the colony."

Second Board

The second State Board of Health was organized September 10, 1903, under an act of the legislature. The board consisted of 12 members, one from each congressional district, appointed by the governor and the secretary. An appropriation of \$3,000 was made. Dr. H. F. Harris was elected as secretary at a salary of \$2,000 yearly. The remainder of the appropriation was to be used in the general work of the board.

After much difficulty in organizing and securing office space, the department began operation in a small room in the basement of the capitol in 1904, using a microscope and apparatus belonging to Doctor Harris. The first work was devoted to bacteriology, and the control of smallpox and yellow fever. Later, a vast amount of research work was done by Doctor Harris on the etiology of pellagra. Although handicapped by limited resources, the early efforts of the State Board of Health are highly commendable.

At a meeting of the State Board of Health January 13, 1914, Dr. Harris expressed a desire to retire from public health work as soon as he could be relieved of his duties without prejudice to the work in order that he might devote his time and effort to research.

During 1914 the health laws of the state were amended by the passage of the Ellis health law.

At a meeting of the State Board of Health July 16, 1917, Dr. T. F. Abercrombie was elected secretary and registrar of vital statistics. He assumed charge of the work August 1.

The progress of the Georgia State Board of Health can be ascertained from the following history of the divisions and summary of the work accomplished during 1931:

Laboratory

The laboratory was organized under the administration of Dr. Harris and formally opened January 1, 1905. For two years Dr. Harris did all the work himself. In 1907 the work had greatly increased and an assistant and a clerk were employed. The manufacture of Pasteur treatment was begun in 1908. In 1909 an appropriation was secured for the manufacture of diphtheria antitoxin. The manufacture and distribution of typhoid vaccine was begun in 1912. During the first nine years of its operation, the laboratory examined 31,079 specimens, this service having expanded at a steadily increasing rate until in 1931, a total of 105,270 specimens were examined.

County Health Work

A department of field sanitation was established April 20, 1910, with Dr. A. G. Fort as director. During that year 59 counties were visited, and 15,572 school children were examined clinically for hookworm disease. This work was continued for five years.

The first full-time county health project established in Georgia was in Glynn county early in 1914. Later

in the year the Ellis health law, sponsored by Colonel R. C. Ellis, of Tift county, was passed creating a board of health in every county in the state. This law provided for the employment of a full-time county health officer upon two successive recommendations of the grand jury. Following the passage of this law, Glynn and Floyd counties adopted its provisions. Both of these counties have continued health work without interruption since that time.

Vital Statistics

Georgia was the first state in the Union to pass a law requiring the registration of births (1823). This record, however, is not held by Georgia in regard to laws requiring the registration of deaths, as 17 states passed such laws before Georgia. Under the provisions of the birth registration law of 1823 the clerks of the courts of ordinary were required to register the names and date and place of birth of all persons reporting themselves to him or who might be reported by their parents or guardians.

The first law requiring the registration of both births and deaths was passed by the general assembly in 1875. Under the provisions of this law, the physicians were required to file certificate for every birth and death attended by them, with the ordinary of the county in which the birth or death occurred.

The present vital statistics law was approved August 17, 1914, but was not put into effect until January 1, 1919, due to lack of appropriation to enforce.

In 1921, Houston county refused to pay the fees for the collection of birth and death records on the ground that there was no provision in the constitution providing for such taxation. A case was instituted in order to test the constitutionality of the law. In November, 1924, the circuit judge decided that such payment was constitutional. Houston county appealed the case, and in June, 1925, the supreme court reversed the decision of the circuit judge, declaring that the payment of such fees was unconstitutional. This decision resulted in registration falling off about 30 per cent, and the state being dropped from the registration area in 1925 by the Census Bureau.

In 1926, at the extraordinary session of the legislature, a bill was passed, almost unanimously, proposing an amendment to the constitution legalizing the payment of fees by counties. The constitutional amendment was ratified at the state-wide election in November, 1926. On November 16, 1926, the Governor of Georgia proclaimed the constitutional amendment ratified.

Venereal Disease Control

The division of venereal disease control was established in June, 1918, in co-operation with the surgeon general in an effort to send uninfected men to the camps. Rules and regulations pertaining to the control of venereal diseases were promulgated. During that year, the message of clean living was carried to approximately 90,000 people.

Through the co-operation of the medical profession, the United States Public Health Service, Emory University, and the State Board of Health an annual

venereal disease clinic for post-graduate study was organized in 1919.

Child Hygiene

The division of child hygiene was established in May, 1920; 22,301 school children were examined the first year; 14 clinics were held, and 54,103 bulletins on child care were distributed.

The Healthmobile, a gift of the National Phi Mu fraternity to the mothers and babies of Georgia, began operation in June, 1922. Since that time, every county in the state has been visited by this unit. During the last year of its operation, 1929, the Healthmobile personnel examined 5,576 infants and school children, and 15,898 defects were found in this group.

In conjunction with the American Child Health Association, a May Day program is put on each year.

At the annual meeting of the Medical Association of Georgia May 9, 1924, a resolution was adopted requesting the State Board of Health to take up the instruction of midwives and to supervise their work.

Sanitary Engineering

The division of sanitary engineering was organized in 1920, and the work has gradually increased to its present scope. There are 275 public water supplies in the state, serving a population of 1,117,500; 222 of these supplies are under supervision of this division.

The first malaria control promotion was begun for the urban population, and has continued until practically all towns and cities are now accomplishing efficient malaria control work. By 1926, the amount of money spent by Georgia towns and cities for mosquito eradication and malaria control reached the sum of approximately \$275,000.

This division has also undertaken the problem of rural malaria control, comprising control of all large bodies of water for hydro-electric development. During 1931, there were 150,000 acres comprising 38 lakes under rigid malaria control. There were 314 ponds drained throughout the state, comprising 135 miles of drainage. This drainage was accomplished by the division engineers making surveys in 24 counties and supervising the work subsequently undertaken. The county authorities furnished the machinery and convict labor for this purpose.

General rural and municipal sanitary assistance was furnished for the prevention of diseases caused by insanitary environment.

Tuberculosis Field Clinic

The diagnostic unit, consisting of a physician skilled in the diagnosis of tuberculosis, a nurse, an X-ray technician, and truck equipped with a complete X-ray laboratory, visited 36 counties during 1931. There were 5,782 primary and "check up" examinations made of persons who gave clinical indications of tuberculosis, or who had lived in close contact with a tuberculous person. Of those examined, 1,389 were found to be suffering with active tuberculosis and 654 were regarded as suspicious and scheduled for further observation.

A large per cent of those diagnosed as tuberculous was discovered while the disease was incipient, at a

time when a minimum amount of care is much more effective in accomplishing a cure than would be major efforts and a maximum expenditure several years, or even months later. Both positive and suspicious cases were placed under the care of physicians of their own choice.

The value of this work can be realized when it is known that, in addition to the grave importance of discovering the disease in its early stages, the average cost of patients treated at Alto is \$400.85 (1930); the cost to the state, per patient, of the services of the field clinic is less than five per cent of the sum expended per patient in the cure of this disease. By far the greatest worth of this service is the chance of a healthy, useful life given to those found with incipient tuberculosis.

The field clinic work is carried on through co-operation with the State Tuberculosis Sanatorium, the Phi Mu fraternity, and the State Board of Health.

Trachoma Work

At the request of the state health officer, an investigation of trachoma was instituted in Mitchell county in September 1921. Dr. I. W. Irvin, of Albany, had been receiving patients from Mitchell county that he believed to be suffering from trachoma. Since the patients lived at some distance and did not co-operate in the treatment, it was more or less unsatisfactory. Doctor Irvin reported this, and the Public Health Service was requested to determine the real nature of these cases. Investigation showed a serious condition in Mitchell county. The plan outlined for the relief of the situation was a trachoma clinic. The clinic was in operation from November 14, 1921, to April 1, 1922. During that time, 2,111 cases of trachoma were diagnosed and treated; 381 operations were performed for various conditions of the eye, nose and throat.

Due to the fact that a number of cases of trachoma were discovered early in the year 1931 in the southwestern part of the state, request was made to the surgeon general for the assistance of a trachoma expert, which request was granted. From February through July, 720 cases of trachoma were located in nine counties. All of the cases found were treated, and 135 operations were performed. The United States Public Health Service withdrew their active support August 1, and the legislature appropriated \$10,000 to continue this work. Beginning in September, arrangements were made to take over the work, and since that date 219 additional cases of trachoma have been located and put under treatment; six operative clinics have been held. This disease is now being found in other sections of the state.

(Second installment of this article will be published in the next issue.)

—Atlanta Constitution, Atlanta, May 16, 1937.

Stephens County Medical Society

The Stephens County Medical Society announces the following officers for 1937:

President—J. H. Terrell, Toccoa.

Vice-President—E. F. Chaffin, Toccoa.

Secretary-Treasurer—C. L. Ayers, Toccoa.

BOOK REVIEWS

A Textbook of Medicine. By Charles Phillips Emerson, M.D., Research Professor of Medicine, Indiana University; formerly Associate in Medicine and Medical Resident, Johns Hopkins University and Hospital; Assistant Professor of Medicine, Cornell University (Ithaca); Medical Superintendent, Clifton Springs Sanitarium, New York; Professor of Medicine and Dean, Indiana University School of Medicine, Indianapolis, Indiana. 1296 pages. Philadelphia: J. B. Lippincott Company, 1936.

One must commend the courage of a man who in this day and time will undertake to write a complete textbook of medicine. It is most interesting to note that Dr. Emerson is the second man who has had this much courage in the past year. Frankly the reviewer approves of the project even though it has certain shortcomings. The plan of this volume is to present internal medicine in terms of the clinical pictures of diseases and to explain these by the findings of bacteriology, biochemistry, and abnormal physiology, rather than to emphasize the symptoms as logical consequences of disturbances in these fields. The book has copious footnotes of great historical interest. Finally the discussion of the emotional reactions is excellent. It is a well-rounded book and one that should prove of distinct value to almost anyone engaged in the practice of medicine.

It is surprising to observe that the author advocates the removal of tonsils at once in rheumatic fever, and even more surprising that he reverts to the old fashioned terminology of "acute rheumatic fever." His discussion of syphilis is particularly good (one may look forward to his following MacCallum's example and abandoning in future editions the idea that syphilis causes stricture of the rectum). "Chronic intestinal pneumonia," which occurs three times on pages 630 and 631, will of course also be corrected in the second edition. He does not advise strict adherence to the old Sippy regime in the treatment of peptic ulcer. Some will regret the absence of illustrations, but the clear type on the dull white paper makes the text easy to read.—L.M.B.

Arthritis and Rheumatic Disease. By Maurice F. Lautman (Whittlesey House Health Series). Chronic arthritis is today one of the most disabling diseases that we know and because of the complexity of the symptoms is one of the most difficult for the physician to manage.

Dr. Lautman begins this most interesting treatise on arthritis and rheumatic disease by devoting a whole chapter to a definition of arthritis. This is followed by chapters on the causes, symptoms, and the rheumatoid disorders. He then discusses the role of focal infection, relation of diet, the mental aspects and the treatment of arthritis.

One cannot read this treatise without gaining a better knowledge of so common a malady, as well as learning a better approach to a disease that was once viewed pessimistically by the physician as well as the patient.

HUGH H. BARFIELD, M.D.

Surgical Pathology of the Thyroid Gland. By Arthur E. Hertzler, M.D., Halstead, Kansas. J. B. Lippincott Company, publishers, Philadelphia, Penn.

The book above contains 238 illustrations and 13 chapters which adequately cover every phase of the thyroid gland, including the diseases thereof. It is written with masterly simplicity and is devoid of useless arguments. One of the best and most informative parts of the book is found in Chapter I, for here the author renders years of careful observation in a lucid and easy manner. The chapter dealing with the morphology of the thyroid gland is especially helpful from a student viewpoint in building up a concrete understanding of the changes incident to the gland following disease conditions. The writer has paralleled much of his material with his excellent understanding of the pathological changes in goitre. Such a basis of arrangement adds materially to the volume. The book is the work of a great pathologist and surgeon and fills every desire for both internist and surgeon, and every pathologist should have this book in his library.

JACK C. NORRIS, M.D.

Cushny's Pharmacology and Therapeutics. Lea & Febiger, Philadelphia, Pa. For years this book has been a standard text in medical schools throughout the world and has made for itself a definite place in the literature of medicine. Since the death of Dr. Cushny in 1926 this work has been carried on by Dr. C. W. Edmunds of the University of Michigan and Dr. J. A. Gunn of Oxford, England. They now bring out the eleventh edition. It has been largely revised with the addition of much new material and the deletion of that which has become obsolete. This edition retains the high standing of its predecessors as an outstanding work on pharmacology and therapeutics.

C. M. WEST, M.D.

Senile Cataract (Methods of Operating). Third Revised Edition. By W. A. Fisher, M.D., F.A.C.S. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; formerly Professor of Clinical Ophthalmology, University of Illinois; formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; formerly President, Chicago Ophthalmological Society; member, Illinois State Medical Society; Chicago Medical Society; fellow, American Medical Association; fellow, American College Surgeons; fellow of the Academy of Ophthalmology and Oto-Laryngology. 150 pages and 181 illustrations. Published by H. G. Adair Printing Co., Chicago, Ill. Price, sent direct from author to reader, postpaid, \$2.00. (W. A. Fisher, M.D., Chicago, Ill.)

This splendid little book has been improved over previous editions, especially in the matter of illustrations. Every eye surgeon could well afford to have this book as the technic and views of several of the world's leading ophthalmologists are presented and he has a ready reference for various cataract operations.

ZACH W. JACKSON, M.D.

Ophthalmoscopy, Retinoscopy and Refraction — With New Chapter on Orthoptics. By W. A. Fisher, M.D., F.A.C.S., of Chicago, Illinois. Fourth Revised Edition with 240 illustrations, including 24 colored plates. Published by H. G. Adair Printing Co., Chicago, Illinois. Price \$2.00.

This small volume, at first glance, would not appear to cover the various subjects thoroughly, but a careful examination shows it to be a splendid book of instruction. The color plates are beautifully executed.

The new chapter on orthoptics gives a composite opinion of various enthusiasts in this field.

ZACH W. JACKSON, M.D.

Carcinoma of the Female Genital Organs. By M. C. Malinowsky and E. Quater. Translated from the Russian by A. S. Schwartzmann, A.B., M.D. Boston: Bruce Humphries, Inc. 1936. \$5.00.

A brief review of female genital malignancies by eleven Russian contributors, which offers nothing new in this field. The discussions and illustrations of the pathology are quite inadequate. The numerous statistics from the Russian clinics differ in no way from those of other countries. The last chapter, which deals with Carcinoma of the Female Sexual Sphere and Disability, gives one an idea of the ramifications of socialism in medicine.

JAS. N. BRAWNER, JR., M.D.

THE SUMMER-TIME USE OF MEAD'S OLEUM PERCOMORPHUM

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There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In premature, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, Mead's Oleum Percomorphum is the anti-ricketic agent of choice. (2) In Florida, Arizona and New Mexico, where an unusually high percentage of sunshine prevails at all seasons, Mead's Oleum Percomorphum continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., July, 1937

Number 7

THE STORY OF THE VITAMINS IN INFANT NUTRITION*

ISAAC A. ABT, M.D.
Chicago

It would be impossible in the course of one short paper to relate all of the known facts and ramifications on the subject of vitamins. I shall attempt, therefore, to give in brief summary some of the outstanding facts concerning the vitamins which relate to the health, growth and development of infants and children.

The recent knowledge of vitamins originated with N. Lunin in Bunge's laboratory (1880). Lunin thought that a synthetic milk diet lacked something, an unknown factor which is necessary for growth in animals. This observation was confirmed by Sir Frederick Gowland Hopkins (1912). Takaki (1882-1886) found beriberi disappeared from Japanese sailors by providing an improved mixed diet. C. Eijkman and Grijns found that avian beriberi was caused by an improper diet, and that the condition could be cured by an antineuritic substance derived from rice husks and beans (1897-1906). Early experiments were also made by Fraser and Stanton (1907), Abderhalden and Rona (1904), and Ethel Wilcox and Hopkins (1907); likewise, by E. V. McCollum and Steenbock (1911). Mendel and Osborne (1912) showed that rats can live 530 days on protein-free milk and gliadin, but cannot grow for lack of glycin and lysin. Casimir Funk of Warsaw, Poland, later of New York, former assistant to Prof. Abderhalden, introduced the term "Vitamin" (1911) to denote the missing accessory factor in the polished-rice production of beriberi. He designated vitamin deficiency as the cause of beriberi, scurvy, pellagra and rickets. From

Funk's time, vitamins have been classified in various groups, and the whole subject has been amplified by innumerable investigations, as will be indicated as we progress.

S. Burt Wolbach points out that vitamins appear to be directly or indirectly of plant origin. They are not sources of energy and are not building materials as fats, carbohydrates and proteins. Wolbach continues to say: "Deprivation of a vitamin suppresses a physiologic process. The cells concerned may exhibit changes but may survive and be capable of growth and multiplication."

VITAMIN A (ANTIXEROPHTHALMIC)

Vitamin A was discovered by Hopkins in England and by Osborne and Mendel; also by McCollum and Davis in America. Vitamin A was originally designated "fat-soluble A" because it occurs in cream, the fat of milk and in the fat from yolk of eggs. Vitamin A is distinguished from vitamin B, which also occurs in milk and eggs, by the fact that vitamin B is water-soluble.

Sources of Vitamin A. It occurs in mammalian and fish liver, egg yolk, butter, cream and in some vegetable foods. Vegetable oils contain little or no vitamin A, with the exception of corn oil and red palm oil. Fats from meats, lard and beef fat contain small quantities, though the vitamin A content varies with the animal's diet. Cereals are relatively poor in vitamin A, though maize is an exception. Some plants seem to contain vitamin A, especially those having a green or yellow color; among these may be mentioned sweet potato (the ordinary potato contains none), and in addition may be mentioned carrots, yellow maize, escarole, spinach, cress, string beans and green peas. Pumpkin, bananas and cantaloup all contain a considerable quantity of vitamin A. In other vegetables, such as white corn, celery, cauliflower, white turnips, cabbage, radishes and

*Abner W. Calhoun Lecture before the Medical Association of Georgia, Macon, May 12, 1937.

other colorless vegetables. the amount of vitamin A is negligible.

Composition of Vitamin A. Vitamin A is primarily an alcohol, soluble in fats and fat-soluble, is readily destroyed by oxidation at all temperatures. Carotene from carrots is capable of replacing vitamin A in the diet. When carotene or pro-vitamin A is ingested, it is converted into vitamin A in the liver, where it is stored. The conversion is relatively slow and not complete. The quantity of vitamin A in the liver of the new-born is low, gradually increasing in the first weeks of life, the vitamin being supplied to the offspring in the milk. The amount of vitamin A in human milk is small. The quantity is higher in colostrum than in milk. *Cod liver oil and other liver oils are the best sources of vitamin A.* Vitamin A is destroyed at high temperatures, though it is stable to temperatures of 100 to 120 C, providing oxidation is prevented. Vitamin A is destroyed by irradiation with ultraviolet light.

Positive Effects of Vitamin A in the Animal Body. Vitamin A is essential for the normal growth of the young mammal and other vertebrates. It is required for the normal state of all tissues of epiblastic origin, such as the brain, central nervous system, retina, skin and the glands which arise in the skin, such as the tear, sweat, sebaceous, salivary and other glands; its presence in the body is also required to maintain normal conditions of the mucous membrane of the mouth and the vagina, both of epiblastic origin. In some way, the normal state of the mucous membrane of the intestine seems to depend upon vitamin A. It also has been held that it plays a part in fertilization and reproduction. Whether it is needed for the normal blood-forming mechanism is still in doubt.

When a young mammal is deprived of vitamin A certain disease reactions occur which we speak of as "deficiency symptoms." These symptoms may be mild or severe.

Relation of Vitamin A to Growth. It has been shown experimentally that rats receiving an inadequate amount of vitamin A will cease to grow, lose weight and die, if deprived of this vitamin for some time. The loss of weight is largely due to the loss of fat in the depots. The muscles tend to undergo atrophic changes. Anemia is not uncommon; degen-

erative changes may occur in the skeletal muscles, and lymphoid hypoplasia of the spleen has been observed. Vitamin A deficiency causes emaciation, and atrophy of other organs, such as the testes, thyroid, pituitary gland, salivary glands, liver and spleen. In the long bones atrophy is the most frequent histologic feature; there is a delay in the development of cartilage, which fails to differentiate, and bony development in this area is also delayed. The spongiosa also shows atrophic changes, the trabeculae are thin, and the osteoblasts are scant and small. The skeletal changes in vitamin A deficiency have been described as consisting of complete cessation of epiphyseal activities and bone growth. In bone repair, the cartilage assumes proliferative activity, becomes penetrated by blood vessels, and results in normal serrated or trabeculated cartilage of growing bone. May Mellanby has pointed out that vitamin A deficiency produces atrophy and metaplasia of the enamel-forming organ in rats and guinea pigs, leading in time to atrophy of the teeth. Enamel formation is suppressed and deformities of the dentine result. Boyle has confirmed Mellanby's findings and believes that vitamin A deficiency, more than any other avitaminosis, causes developmental defects in the formative period of tooth production.

Lowered Resistance to Infection. Many investigations have been conducted to clarify this point. The consensus of opinion seems to be that immunity against infections was not increased in infants when vitamin A was added to the diet. It has not been shown to be effective in preventing colds and influenza. Lafayette Mendel, speaking on this point, thought it better to stress the action of the vitamin in preserving health and vigor, rather than to herald any specific action against bacterial infection. As it now stands, an adequate or an excessive amount of vitamin A does not seem to prevent the upper respiratory infections.

Skin Lesions. In rats receiving insufficient vitamin A, atrophy of hair follicles and sebaceous glands was observed. In animals more than four months old, scabby ears and tails, sores or abnormal growths on the nose, sore feet and ragged hair occurred, when vitamin A was lacking in the food supply. In

infants and children, somewhat similar changes occur: the skin is dry and scaly, furuncles and abscesses on the scalp may be observed, and alopecia or bleaching of the hair may be present. The characteristic lesion consists of a papule of varying size, occurring especially on the thighs and extensor surfaces of the arms and legs. The papule contains a pointed plug of keratinized epithelium which can be expressed, leaving a crater-like opening.

Eye Diseases. The involvement of the eye occurs late in vitamin A deficiency. The first change is metaplasia of the epithelium of the cornea and of the conjunctival sac. The cornea becomes vascularized, edematous and infiltrated with leukocytes. Early in eye disorders small, dry, round or triangular patches in the canthi are observed—so-called "Bitôt Spots." Other symptoms are photophobia, dryness and granulated appearance of the conjunctiva, and occasionally congestion and hyperemia; also, cornification of the cornea. In xerophthalmia the primary change occurs in the lachrymal glands, probably due to the atrophy and metaplasia of the ducts. The corneal surface becomes dry, the secretions of the tear and other glands of the eyelids cease, owing to the keratinization of the epithelium of these glands. Ulceration of the cornea may now take place, and if it progresses, lead to perforation, the loss of the aqueous humor and, finally, blindness. During the blockade of the Central European countries during the World War, this condition was not uncommonly observed, because of the shortage of fats and other vitamin A products.

Relation of Vitamin A to the Retina. Mild cases of night blindness (also called hemeralopia or nyctalopia) are found not infrequently. The patients show impaired visual adaptability to darkness or, in other words, the power of vision in feeble light is lost. The condition is due to a loss of the visual purple which is contained in the rods of the retina. This coloring matter is first changed to an orange yellow and then bleached by light. The loss of the visual purple produces loss of the power of seeing faint sources of light. This may occur in vitamin A deficiency.

Cornification of Epithelial Surfaces. The epithelial linings of the respiratory, alimentary and genito-urinary tracts, and the ducts

of various glands, are changed into a stratified, squamous type of epithelial cells with consequent drying up of the secretions. This is a specific reaction of the absence of vitamin A, and it should be noted that if the proper vitamin A substance is administered sufficiently early, the affected cells may return to their normal physiologic function.

The primary effect of vitamin A deficiency is noted in epithelial structures. First the epithelial cells become atrophied and then become stratified and keratinized. Wolbach has called this process "keratinizing metaplasia." The most common pathologic changes of vitamin A deficiency in animals as well as in human infants, are produced by the desquamation of keratinized cells. These cells accumulate in many glands and their ducts as well as in other organs. They may form cysts in glandular organs, the contents of which may be composed of yellow, cheesy masses of keratinized cells. In the lungs of infants and experimental animals, the keratinization may lead to cyst formation or bronchial occlusion resulting in possible bronchiectasis or atelectasis. The process most mentioned, keratinizing metaplasia, has been found in human infants affecting the conjunctiva, mucous membranes of the nose, trachea, bronchi, accessory sinuses, pancreas, renal pelvis, ureters, salivary glands, uterus and peri-urethral glands. The earliest appearance of the metaplasia is in the trachea and bronchi. Perhaps the effect of vitamin A deficiency may explain the severe and fatal pneumonias in infants who have received an insufficient quantity of vitamin A.

Nervous Lesions. Mellanby thought that in dogs a diet deficient in vitamin A produced degenerative changes in the spinal cord. He also found degenerative processes in the peripheral nerves, though his reports on the value of vitamin A in the treatment of disseminated sclerosis and other neurologic conditions have not yet been confirmed.

Renal Calculi. Stones of the calcium-magnesium variety have been observed in rats that were fed diets deficient in vitamin A.

VITAMIN B

Vitamin B cannot be considered as a single factor. It has been shown that there are several component elements, with variable functions. For practical purposes, we may speak

of the "Vitamin B Complex"— B_1 , which is antineuritic, and B_2 , which is anti-dermatitis.

Vitamin B_1 (Antineuritic). If the human being is deprived of this vitamin, the disorder known as beriberi may develop. This condition is characterized by peripheral neuritis and the degeneration of cells in the central nervous system. Beriberi is not commonly seen in this country or in Europe, though masked symptoms of the disease may be more frequent than usually recognized. The disease has been prevalent in rice-eating countries for centuries. It has been seen in Japan, China, the Dutch Indies and the Philippines. It has also been observed in Labrador and Newfoundland, and in infants receiving deficient diets, no matter what the geographic location. Polished rice is the grain where the husk or bran has been removed. This foodstuff contains no vitamin B.

Takaki of the Japanese Navy (1885) seems to have been the first to suspect that beriberi was due to dietary deficiency. He corrected the diets of sailors, though he thought the disease was due to protein deficiency and so substituted meat, milk, wheat and barley for a part of the rice diet. Eijkman (1880) noticed that fowls in his laboratory fed on polished rice developed paralytic symptoms. Frazer and Stanton shortly thereafter showed that beriberi in fowls and in human beings could be cured by feeding them rice polishings. Casimir Funk (1911) obtained a crystalline substance from rice polishings capable of preventing or curing beriberi.

Properties of Vitamin B_1 . This vitamin has been obtained in a crystalline form from rice polishings and from yeast, and has been shown to have a high potency. Empirical chemical formulas have been proposed, and the chemical nature of the vitamin has been fairly well established. It is soluble in water, glycerine, 70 per cent alcohol and acid media. It is insoluble in oils and ether. In acid media it is resistant to heat, though less so than vitamin B_2 . B_1 is spoken of as the "heat-labile" factor of the complex, because it is destroyed by high heat as in an autoclave, especially in an alkaline solution; B_2 is called the "heat-stable" factor, because it is heat resistant. B_1 is not readily destroyed by strong acid but it is rendered inert by alkalis.

B_1 is a factor essential for growth. Children receiving insufficient quantities fail to grow and develop. Rats whose diet is deficient in this factor are smaller, weigh less, mature later and are not so alert as those having an adequate amount of B_1 in the diet. A sufficient quantity of B_1 is also essential for the normal function of nervous tissue (it is antineuritic). B_1 stimulates the appetite and promotes growth by favoring metabolic processes. A deficiency of this factor not only produces anorexia but also seems to cause a delay in the emptying time of the stomach, defective absorption from the intestine, as well as constipation and sometimes edema. Lack of vitamin B_1 has been thought to cause some of the common feeding difficulties among American children.

Vitamin B_1 deficiency may occur in persons of every age and in the Orient is frequent among nursing infants, especially when mothers during pregnancy or lactation have received a diet deficient in vitamin B. Infants suffering from beriberi develop characteristic enlargement of the heart, with an instability of the pulse rate, tachycardia, dyspnea, cardiac dilatation, pallor and cyanosis. Shoshin attacks occur in the acute stage of beriberi and are characterized by palpitation, extreme pallor and a feeble, whispering voice. The infant moans as if in pain, soon becomes apathetic or comatose, the extremities become cold, twitchings set in, and the head is retracted. Sometimes high fever accompanies the coma, and death ensues.

The relation between diabetes and vitamin B_1 deficiency may be due to an imbalance of carbohydrate metabolism. B_1 deficiency has been thought to cause eye diseases such as acute and chronic disorders of the ocular muscles, hemorrhages into the retina and optic neuritis. Deficiency of this vitamin has little definite effect on the gastric juice, though it does seem to bear a relationship to pancreas and liver functions, and may at times explain fat indigestion.

Sources of Vitamin B_1 . It is present in vegetables such as cabbage, tomatoes, turnips, spinach, onions, beets, potatoes, carrots, asparagus, green beans and soy beans. Lean pork and the glandular organs of animals (liver, kidneys and pancreas), as well as eggs are available sources. The germ of cereal grains, rice polishings and bran are still other

sources of supply. In yeast vitamin B_1 is especially abundant; also in mushrooms and other fungi. Among the fruits, grapefruit, oranges and canteloup contain appreciable amounts; apricots, apples, berries, pineapple and prunes have a lower content. Milk, both human and cow's, may be deficient in the vitamin B complex, since the type of animal feeding determines the quantity of this factor. Heating milk or evaporation will have no effect upon this vitamin, but vegetables, meats and fruits lose a considerable quantity when cooked in water, for vitamin B_1 is water-soluble.

VITAMIN B_2 (G)

(The Anti-dermatitis or Pellagra-preventing Factor)

The same substances which are richest in B_1 factors (yeast and wheat germ) contain B_2 (sometimes referred to as vitamin G). It has been found, however, that certain vegetable substances which had an antineuritic factor seemed to possess little effect in promoting growth. When yeast was subjected to a high degree of heat, thus destroying the antineuritic factor, growth due to vitamin B_1 continued for a short time, then ceased and the animals died. In another series, after the cessation of growth, autoclaved yeast and maize extract were added to the diet and normal growth was resumed. The growth factor in autoclaved yeast is B_2 and that in the maize extract, B_1 . An animal receiving an adequate amount of vitamins A and B_1 , however, fails to grow if B_2 is lacking in the diet. It must be admitted that at present there is some confusion in regard to this B_2 factor, especially with regard to the etiology of pellagra. It is evident that there is some connection between B_2 deficiency and this disease, but a positive relationship has not been satisfactorily proved.

The chief symptoms of pellagra are rough skin, patches of dermatitis, redness and soreness of the tongue, alimentary disturbances and diarrhea. The redness, dryness and scabiness of the skin occur on the surfaces exposed to the sun's rays—backs of the hands, the feet of those who go barefoot, neck, cheeks and bridge of the nose. Degeneration of the tracts in the cord, particularly of the posterior column, has been observed at autopsy (also degeneration of nerve cells in the brain

and cord). Beriberi affects those who subsist on polished rice; the mystery of pellagra, however, has not been fully solved.

Goldberger thought at first that the disease was due to a protein deficiency. Later, he thought it was due to a lack of vitamins, and that foods containing vitamin B_2 could prevent and cure pellagra.

In dogs the condition known as "black tongue" is thought to be analogous to human pellagra. Necrotic areas on the tongue and the mucous membrane of the mouth and a pellagra-like dermatitis develop in animals receiving a diet deficient in vitamin B_2 . A similar condition may develop in rats who do not receive sufficient B_2 . However, it must be admitted that diseases produced in lower animals are not always identical with the same disease which occurs in human beings, so the relationship between these deficiency states and human pellagra is not positively established.

It was formerly suggested that corn may contain a toxic substance which, in addition to vitamin B_2 deficiency, may produce pellagra. This view is no longer prevalent, nor does the grain of corn seem to be any more deficient in B_2 than other cereal foods, such as rice or millet.

There are those who think there are two factors in vitamin B_2 —one which prevents dermatitis and another which promotes growth, though the evidence on this point is not sufficient to warrant such an hypothesis.

Sources of Vitamin B_2 . It occurs in the whey of milk. It is also found in egg white, yeast, green vegetables, edible roots, unmilled cereals and liver. B_2 appears to be identical with the water-soluble, yellow pigment which is called flavin. (However, Elvehjem, in a recent paper, takes the position that B_2 is not a flavin as previously supposed, but a separate chemical entity.) Nevertheless, flavins occur in animal and vegetable food-stuffs; in milk we find lactoflavin; in eggs, ovoflavin; in liver, hepaflavin. The flavins have been tested in rats, and it is suggested that the growth-promoting factor and perhaps the skin factor are due to the presence of the flavins contained in vitamin B_2 .

With the exception of egg white, which contains B_2 but not B_1 , as a rule foods which contain B_2 also contain B_1 . However, there is

usually a difference in their quantitative relationship. For example, some cereal grains are rich in B_1 , poor in B_2 ; leafy green vegetables are said to contain more B_2 than B_1 ; bananas have a high B_2 content but are deficient in B_1 ; meat and milk on the whole are richer in B_2 than B_1 . These quantitative estimates vary, of course, according to the conditions under which the plants and animals develop and are nourished and are not absolute.

The many investigations of the vitamin B complex seem to indicate that it is composed of several chemical entities. It has already been pointed out that there is the heat-labile factor (B_1) and the heat-stable factor (B_2). Other factors have been described, such as vitamins B_3 , B_4 and B_5 and recently Peters noted that at least six entities compose the Vitamin B complex. Vitamin B_6 has been identified in rats. It is supposed to be one of the principal components of vitamin B_2 . Its absence leads to the development of rat pellagra, though it is questionable whether rat pellagra, chick pellagra and human pellagra are identical. In the rat, deficiency of B_6 causes a characteristic dermatitis affecting the extremities, nose, eyes and ears. B_6 is referred to as the "antirrat pellagra" vitamin. All six vitamin B factors, however, are not uniformly recognized and it is obvious that at present there are insurmountable difficulties in identifying these various factors, as well as determining how many of them are essential in human nutrition.

VITAMIN C

A deficiency of vitamin C in the human body produces scurvy. The monkey and the guinea pig are also susceptible to the disease, though in other animals, such as dogs, mice, rats, rabbits or chicks the disease cannot be produced; this is probably due to the fact that these animals either store vitamin C in the liver or synthesize it from foodstuffs. Wolbach points out that the absence of vitamin C in the human body prevents the formation of the matrices of white fibrous tissue, bone, cartilage and dentine. This explains all gross lesions of scurvy. The consequences of its absence are, therefore, most apparent in growing animals and in the repair of lesions which occur in the tissues named above. It is apparent, then, that vitamin C deficiency affects mesenchymal tissues, the

most obvious morphologic consequence being the effect on the formation and maintenance of intercellular materials.

Scurvy has been known since ancient times. In the 16th century a company of English sailors acquired the disease enroute to Canada (1535). Some of them died during the voyage, and those that remained ill after landing were cured by a decoction made from the leaf and bark of an evergreen tree. John B. Nichols has recently called attention to the fact that in the 16th and 17th centuries the expeditions conveying settlers to America suffered frightful loss of life from scurvy. Out of 102 passengers on the Mayflower, 50 died from this and other diseases. It is interesting to note that even in those days the juice of lemons was known to be antiscorbutic, but was not always available, especially when voyages lasted as long as eight weeks and methods of preserving food were insufficient. Bachstrom (1734) noted that specific anti-scorbutic properties were obtained by eating fresh vegetables. James Lind (1747), British naval surgeon, described the efficacy of oranges and lemons in the prevention and treatment of scurvy. Lind's views were accepted by the British Navy and Merchant Marine, and regulations were adopted by the English government enforcing dietary prophylaxis against scurvy on English ships. Experimental scurvy was produced in guinea pigs in 1907 by two Scandinavians, Holst and Frölich. This work initiated the modern study of vitamin C and led finally to the identification of its active principle. Further corroborative studies were made by Chick and Hume (1917) and by Cohen and Mendel (1918). The active principle of vitamin C has been isolated by Szent-Györgyi and King, who named it "ascorbic acid." In this country it is called "cevitamic acid." Waugh and King are given credit for the work which identified vitamin C as hexuronic acid.

Ascorbic or cevitamic acid has a high reducing power and is soluble in water and alcohol.

Occurrence of Vitamin C in the Human Body. It probably occurs in small amounts in the cells and tissues of the body, though it is stored to a limited extent only. The adrenal cortex contains a considerable concentration,

but other tissues like the lens of the eye, the vitreous and aqueous humors, the ovaries and pituitary gland contain the largest amounts. In general, it may be said the highest content is found in glandular tissues, and the lowest in muscle and stored fat. There is a loss of vitamin C in the urine. Examination of the urine for cevitamic acid is the simplest quantitative test.

Relation to the Capillaries. Owing to the fact that bleeding occurs readily in infantile scurvy, a "capillary fragility" or a "capillary resistance" test has been suggested to estimate the adequacy of vitamin C administration. However, it is known that in some cases of marked vitamin C deficiency increased fragility is not observed and, furthermore, it has been shown that the degree of fragility does not correspond with the cevitamic levels in the urine or plasma. In any event, the positive chemical test for cevitamic acid in the pre-scorbutic or developed stage gives more reliable evidence. In a developed case of scurvy, roentgenologic examination of the bone is more reliable than the capillary fragility test, though it should not be forgotten that positive fragility tests occur in 25 per cent of the cases of vitamin C deficiency; and, furthermore, that vitamin C appears to be necessary for the health and normal development of capillaries.

Relation to Incidence of Dental Caries and Pyorrhea. There is also evidence in favor of the belief that vitamin C is necessary for the proper development of the teeth, particularly the enamel and cement as well as for the preservation of normal condition of the gums in the human being. It has been shown that small hemorrhages may occur into the teeth before the development of the bone lesions of scurvy. The pathognomonic lesion of scurvy is the subperiosteal hemorrhage, though bleeding may occur to other tissues and organs—into the gums, joints, muscles, mucous membranes and serous membranes. The ribs may be beaded, as in rickets, or the bones may become fragile or fractured.

Infantile scurvy does not differ essentially from that in adults. Infants call attention to their illness first by crying from severe pain in the affected parts and by resistance to active or passive movement. Changes in the bones are characteristic and are demonstrated by x-

ray plates. There is undoubted evidence that definite hypertrophy of the right ventricle of the heart may occur in scurvy. Recently an attempt has been made to show that vitamin C deficiency may be an important factor in the infection which leads to rheumatism. There have been some experiments which seemed to support this view, though there is not yet sufficient clinical evidence to permit the acceptance of this theory for man.

Prophylaxis. The amount of the prophylactic or curative dose of orange juice against scurvy is not known, though it should be given liberally and continuously to young infants, whether they are being fed breast milk or pasteurized milk, and should be continued throughout the period of infancy and early childhood. When other substances containing vitamin C are consumed, the amount of orange juice required is not as great as in the early period.

Vitamin C is contained in many fruits and vegetables, in addition to citrus fruits. Among the other sources may be mentioned strawberries, rhubarb, cranberries, blueberries and certain apples, all of which contain an appreciable amount of vitamin C. Pineapple shows a moderate amount, while prunes, pears, peaches, grapes and cherries are comparatively deficient in this respect. Among the vegetables rich in vitamin C, tomatoes are outstanding, though they contain only half the vitamin C content of oranges. Other good vegetable sources are spinach and cabbage.

Cevitamic acid has been prepared by the chemical manufacturing houses and may be used for the prevention and treatment of scurvy. The dose for prophylaxis is 1/6 grain once a day; for curative treatment, two to four times this dose daily.

Vitamin C may be destroyed by heat and oxidative processes. Prolonged boiling, drying or storage of food diminishes the anti-scorbutic properties. It is said that freezing has little harmful effect on the vitamin C content of foods. The use of copper vessels for boiling foods containing vitamin C tends to destroy the vitamin. Boiling milk for an extended period of time, whether in a copper or enameled vessel, devitaminizes it of vitamin C.

VITAMIN D

Edward Mellanby, the English physiologist, discovered vitamin D (1918-1919). He

fed dogs diets deficient in vitamin D and produced rickets; then by adding cod liver oil, he found the disease could be prevented. McCollum succeeded in separating vitamin A from vitamin D in cod liver oil by passing a stream of oxygen through the heated oil. Huldchinsky, during the World War, showed that ultraviolet irradiation was the specific cure for rickets. Hess, in 1924, showed that antirachitic potency could be developed in a number of different biological materials by exposure to a quartz or carbon arc lamp. The sterol in the skin was found to be activated by irradiation with light, thus producing the specific vitamin D. In 1926 Rosenheim and Webster reported that ergosterol was one of the sterols which could be activated by means of irradiation; and Windaus and Hess showed that ergosterol, not cholesterol, was the provitamin of the antirachitic factor.

Vitamin D is necessary for the proper absorption of calcium and phosphoric acid. When it is given, and the infant is receiving at the same time a diet adequate in calcium and phosphoric acid, an increase occurs in the calcium and the phosphoric acid of the blood. As a result, calcium phosphate and calcium carbonate are deposited in the bone, and this tissue becomes normal and dense. If the vitamin D is deficient in quantity, the deposition of calcium and phosphorus is retarded and previously deposited calcium phosphate may be redissolved. But deficiency of the vitamin also suspends the cartilage cell cycle essential to endochondral growth.

It has been noted that symptoms of toxicity, apparently due to excess of vitamin D, sometimes develop in lower animals, as well as children. This condition, called hypervitaminosis, may result following large dosage of irradiated milk or ergosterol. Calcification of the heart muscle, the arterial walls and other internal organs has been thought to develop in such cases. Wyndaus believes, however, that the toxic effects may be caused not by vitamin D but by other substances produced simultaneously with it by the action of ultraviolet rays.

The Chemical Nature of Vitamin D. Vitamin D is a sterol. It is produced from ergosterol by absorbing the energy of light. Ergosterol absorbs ultraviolet light and transforms itself into vitamin D. Vitamin D seems

to be the crystalline product, "calciferol," of Webster and co-workers.

The specific action of vitamin D is little known. The fact is established, however, that it is essential for adequate mineralization of bone and teeth and it is closely related to the metabolism of calcium, phosphorus and the parathyroid hormone.

It has been held by some that cod liver oil is more effective than irradiated ergosterol in curing rickety conditions in chicks. It has been suggested that in human rickets irradiated ergosterol, in terms of rat units, is less effective than cod liver oil.

At a meeting of the American Pediatrics Society in 1936, the subject of the antirachitic effect of vitamin D from various sources was considered at some length. In this discussion, T. G. H. Drake, Toronto, reported the value of the various amounts of cod liver oil, viosterol, irradiated fresh and evaporated milk, irradiated cholesterol and irradiated yeast. No evidence was obtained in Drake's experiments of any great difference in antirachitic effectiveness of the experimental substances. Martha Eliot and a group of co-workers found:

(1) Irradiated evaporated milks containing 400 U.S.P. units of vitamin D are more effective in the prevention of rickets than cod liver oil of approximately the same dosage level.

(2) She found no evidence that cod liver oil, as a preventive, is superior to viosterol used in equivalent dosage.

(3) There is no definite evidence that one type of irradiated milk at the 400 unit level is superior to any other type of milk in the prevention of rickets.

Eliot found that, if rickets is to be prevented or cured, an amount of vitamin D must be given that will insure stability in the metabolic processes, provide for normal growth of bone and allow an adequate margin of safety for the rapidly growing infant.

J. M. Lewis conducted a clinical investigation comparing the relative effectiveness of viosterol, percomorph liver oil, cod liver oil and irradiated cholesterol. He reports that the results of the prophylactic study revealed that the degree of protection afforded by these agents, receiving from 135 to 435 U.S.P. units of vitamin D daily, was high and that no difference in effectiveness could be noted

among these several antirachitic remedies. In the curative treatment of established rickets, he concludes that unit for unit cod liver oil, percomorph liver oil and irradiated cholesterol are more effective antirachitic factors than viosterol.

C. B. Jeans concluded the symposium by saying that the whole subject of vitamin D therapy in relation to the different sources and dosages is most confusing. He believes that the controversy is destined to continue until more accurate and definite information has been obtained. After all has been said, it is a clinical fact that rickets has been prevented as well as successfully treated by the remedies now in vogue, such as cod liver oil, cod liver oil concentrates, milk, irradiated milk and viosterol. Many workers are agreed that unit for unit animal sources of vitamin D are essentially equal in antirachitic potency, both for prevention and cure. One source of error in estimating the effect of these antirachitic agents is the difficulty of translating the results obtained in treating rickets in rats and chicks into equivalent terms of potency in human beings. Calcification occurs at different rates in the various species of animals and in consequence we must, for the present at least, by clinical methods derive the proper dosage for the individual infants, depending upon the severity of the rickets or the environment and diet of the infant in treatment.

Sources of Vitamin D. It is contained in cod liver oil, halibut liver oil and the liver oils of other bony fishes. Measured in units per gram, halibut liver oil contains 1200, while cod liver oil contains only 100. Vitamin D is also contained in egg yolk, butter, cream and milk, though the antirachitic potency of these products is quite low and depends on the animals' diet and the amount of sunlight to which they have been exposed. Vegetable foods are practically devoid of vitamin D. It is absent from vegetable oils, unless they have been irradiated. Salmon and oysters contain some of this vitamin. Yeast containing ergosterol, when irradiated, develops antirachitic qualities.

Vitamin D is necessary for the calcification of bone. In infants lack of vitamin D may result in rickets; in the adult vitamin D deficiency tends to produce osteomalacia. A deficiency of vitamin D also is likely to produce dental caries, as well as general muscular

weakness and instability of the nervous system.

HORMONES AND VITAMINS

Difficult as it may be to explain, we are forced to assume that there is some relationship between the vitamins and the hormones of the body. Vitamins and hormones may be looked upon as the material stimuli of life. In considering the function of the vitamins in the animal body, we may mention the effect on the structure and composition and decomposition of the cell. Each vitamin has a relationship to the cells of the germinal layer. The effect of vitamin A on the skin and allied structure, and of vitamin D on the cartilage and bone is well recognized. Another local effect on the cell is improvement of permeability, especially of the cells of the intestine; and, finally, the physiologic effect on cell metabolism.

Fleischmann and Kann have recently suggested, as the result of investigative work, that there appears to be an antagonistic action between the thyroid gland hormone and vitamin A. It has been previously shown that the toxic effect of thyroxin could be combated by vitamin A substances, and conversely that vitamin A poisoning could be combated by thyroxin. It has been suggested that hyperthyroidism should be treated with large amounts of vitamin A.

There are numerous relationships between vitamins and hormones with regard to secondary effects on organs and systems of organs. The development and correct functioning of the hormonal glands depends on the proper administration of vitamins. There is thus a connection between the vitamins and the glands of internal secretion. The effect of the suprarenal cortical hormone is closely bound up with the presence of lactoflavin in combination with phosphoric acid. There seems to be some relationship between insulin and vitamin B₁.

In the relationship between vitamins and hormones mineral substances also play a part. It is suggested that the action of vitamin A is associated with the presence of iron; that of the antisterility vitamin E, and vitamin B₁ with copper.

There is thus a complicated inter-play between vitamins, hormones, mineral substances and the basic food substances. The same substance may act as a vitamin in some instances and as a hormone in others. Vita-

min C is a vitamin for guinea pigs, rabbits and man, and a hormone for dogs, rats and other animals—that is, this substance is formed in the bodies of this latter group. Liver, which has been used with excellent effect in pernicious anemia, must be looked upon as a complex vitamin-hormone combination.

If a necessary vitamin is omitted from the diet, the other factors remaining in the diet become changed and a toxic effect is produced upon the animal. The various vitamins seem to be more alike in their toxic effects than in their curative potentialities; for example, lack of B₁ substance may have the same effect as excessive administration of vitamin D; excess of vitamin D may have consequences similar to vitamin A deficiency.

The effectiveness of hormone therapy can be increased by vitamins. The activity of the suprarenal cortex hormone may be stimulated by vitamin C. Vitamin C has been said to have a detoxifying effect when salvarsan is administered. It has also been maintained that the virulence of diphtheria toxin may be neutralized by administering vitamin C.

The vitamins which are ingested are not always absorbed, and consequently may not be entirely effective in the body. Their utilization may be prevented by pathologic changes in the gastro-intestinal tract.

Carotene and vitamin A may fail of absorption because of digestive disturbances. The vitamin B complex stimulates the secretion of the alimentary tract. Secretion and motor activity are increased by an optimal supply of vitamins A and C.

In closing, it is obvious that in the brief space of a few years a great amount of valuable investigation has contributed useful information for medical practice. One or two decennia before the present period, we had advanced to the point where we were interpreting nutrition in terms of calories, balanced ration and the chemical composition of foodstuffs. Little then did we realize the importance of the elements, at that time unknown, which today are conceded to be factors of great importance in human and animal nutrition. Not only the biologic assays have convinced us of the existence of vitamins, but the chemical discovery of the active principles of some of these factors may be looked upon as one of the most fascinating

romances in modern medicine; though we must realize in a subject of such vast ramifications, the entire theme has not been entirely unfolded, and at present the story cannot be fully told.

THE IMPORTANCE OF TROPICAL MEDICINE TO SOUTHERN PHYSICIANS*

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At the time that the speaker graduated in medicine, the subject of tropical medicine was practically an unknown one to medical practitioners in the United States and largely so to those practicing in temperate regions throughout the world, and there was no book upon this subject published in the English language. In 1898, the first edition of Manson's "Tropical Diseases" appeared and almost overnight the medical profession became acquainted with disease conditions hitherto unknown save to those actually engaged in the practice of medicine in the tropics.

In the same year the occurrence of our war with Spain awakened interest in this subject among American physicians, as our troops were operating in the Philippines, Guam, Cuba and Porto-Rico, all tropical countries, in all of which diseases occurred that American physicians had never been brought in contact with before and which were classified by Manson as "Tropical Diseases." The importance of these diseases was thus forced upon the attention of American physicians serving with our troops in these countries, and within a short period of time not only had they learned to recognize them but had made valuable contributions to our knowledge concerning the diseases occurring in the countries in which our troops were operating. Since that time tropical medicine has been recognized in this country as a distinct branch of medical science and to American physicians and surgeons we owe much of our knowledge of the diseases which are more or less characteristic of the sub-tropics and tropics.

There are many disease conditions which are endemic in the tropics and which occur

*Copy of address scheduled on program to have been delivered before the Medical Association of Georgia, Macon, May 12, 1937. (Illness in family prevented the attendance of author.) Invited guest.

only sporadically, or in epidemic form, in temperate regions. Diseases like plague, cholera, yellow fever, dengue, kala-azar, Oriental sore, sleeping sickness of Africa, sprue and beriberi are endemic in tropical regions but sometimes occur in epidemic form in the temperate zones or as isolated cases coming from the endemic localities. It is most important that the American physician be able to recognize these conditions, for their prompt recognition may enable us to prevent extensive and destructive epidemics.

In order that one may have a better conception of the importance of tropical diseases to the Southern physician, it will be of interest to briefly review the subject of the occurrence of some of the most important of these diseases in the United States, and, especially, in the southern part of this country. For convenience we may divide them into the diseases caused by the protozoa; by bacteria; by filterable viruses; by helminths; and by disorders of nutrition.

DISEASES CAUSED BY THE PROTOZOA

The most important diseases in this group are malaria, blackwater fever, amebiasis, the trypanosomiasis and the leishmaniasis.

The *malarial fevers* have been endemic in this country, especially in the Southern States, from the time that its medical history has been written, but the more severe types of malaria, known as pernicious malaria, and caused by *Plasmodium falciparum* (the estivo-autumnal parasite) so common in the tropics, have been mostly confined to certain localities in the southern portion of our country, although such infections have occurred in more northern localities.

During the past two decades a strenuous campaign against malarial infections has been conducted in the South, resulting in a great diminution in the morbidity and mortality of malaria. The much more general use of the microscope as an aid in the diagnosis of malaria has made for greater accuracy in diagnosis, has rendered it possible to geographically classify the types of malaria occurring in the South, and has resulted in a more prompt and scientific treatment of these infections. While all this is true, much remains to be accomplished in the control of malaria in the South, especially from the standpoint of the control of the human "carrier" of the malaria plasmodia.

The recent development of new drugs of value in the prophylaxis and treatment of malaria has rendered the prompt diagnosis of these infections of still greater importance. The advent of Atabrine, which has been found most effective in the treatment of the malarial infections, and Plasmochin, which destroys the gametocytes of all species of the plasmodia within a short time, has turned a new page in the prophylaxis and treatment of malaria, and a knowledge of the technic of the demonstration of the plasmodia, of their specific morphology, and ability to distinguish the gametocytes from the forms occurring in the human life cycle, has become more important than ever in the control of these infections.

Blackwater fever, the etiology of which is still far from settled, has occurred not infrequently in the Southern States and still occurs in certain localities in these states. The recognition and proper treatment of this condition is most important and with Plasmochin and Atabrine it is now possible to dispense with quinine in the treatment of this disease, thus removing the danger of quinine hemoglobinuria which, in the past, has added to the mortality of blackwater fever. This condition is also of interest to the Southern physician because the etiology is still disputed and there remains plenty of room for further research upon this problem.

Amebiasis, and that phase of amebiasis known as *amebic dysentery*, are widespread throughout the United States, the incidence varying considerably, being highest in certain localities in the South but considerable even in the Northern States. It has been shown by numerous careful surveys that between 5 and 10 per cent of the population of this country are infected with *Endamoeba histolytica*, the cause of amebic dysentery, and that, in some localities, and among certain classes of the population the percentage is much higher.

While the vast majority of the individuals found infected with this parasite in the surveys mentioned did not present any definite symptoms of the infection, it has been shown by numerous observers that the absence of symptoms does not prove that definite pathologic lesions are not present. Thus, marked ulceration of the large intestine and amebic abscess of the liver may occur in in-

dividuals infected with this ameba and who have never suffered from diarrhoea or dysentery, and the writer has observed at autopsy definite amebic ulcerations and amebic abscess of the liver in such individuals.

For many years infection with *Endamoeba histolytica* resulting in the symptom-complex known as "amebic dysentery" was thought to be a tropical disease, but today we know that amebic dysentery occurs not only in the tropics but is world-wide in distribution, while less serious symptoms caused by this ameba occur in thousands of individuals throughout temperate regions. Amebiasis and amebic dysentery occur commonly throughout the South and it is undoubtedly true that many cases of amebic dysentery are wrongly diagnosed while symptoms of lesser importance due to this parasite are generally attributed to other causes. While both amebic dysentery and amebic abscess of the liver occur throughout the United States and especially in the Southern States, cases of latent infection with this parasite in which there are no symptoms, or of active infection, in which the symptoms are atypical or slight, are exceedingly numerous and, until recently, were either overlooked or neglected, so far as treatment was concerned.

From what has been said, it is evident that amebiasis, because of its wide distribution and its undoubted adverse influence upon the health of the population, constitutes one of the major health problems in the South, as well as in the United States as a whole, and that a thorough knowledge of this infection and the measures that may be taken to prevent and cure it, are subjects of great importance to the Southern physician.

Regarding infections with *Trypanosoma gambiense* and *Trypanosoma rhodesiense*, the causes of African sleeping sickness; with *Trypanosoma cruzi*, the cause of Chagas' disease; with *Leishmania donovani*, the cause of kala-azar; *Leishmania tropica*, the cause of Oriental sore; and *Leishmania brasiliensis*, the cause of espundia, it may be stated that patients suffering from all of these infections have been diagnosed and observed in the United States but were always individuals coming from the endemic areas of the various infections. Most of these infections could not become endemic or epidemic in this coun-

try because the necessary insect vectors are absent but Southern physicians will certainly come in contact with them more and more frequently with our increasing commerce with the countries in which they do occur and a knowledge of them is of importance to the physician of the South.

It is of interest, in this respect, to call attention to the possible existence of Chagas' disease in the southern part of the United States, for it has been recently demonstrated by Kofoed and Wood that an insect, *Triatoma protracta*, which is distributed in Southern California, Arizona, New Mexico, Texas and Louisiana, is naturally infected with the trypanosome which causes Chagas' disease and is capable of transmitting it to laboratory animals. This bug bites man and it is altogether probable that careful search will demonstrate that this disease occurs in man in the southern part of this country and is being overlooked or wrongly diagnosed.

DISEASES CAUSED BY BACTERIA

Of the bacterial infections usually classed as tropical diseases the most important are *cholera*, *plague* and *leprosy*. In the past, severe epidemics of *cholera* have occurred in this country but, due to our efficient quarantine service, *cholera* has not been seen in the United States for many years. However, it is not impossible that it may occur at some future time. *Plague* has appeared in the United States in California, Texas and Louisiana and a knowledge of its etiology, epidemiology and prophylaxis are of great importance to physicians in our seaport towns and cities. The presence in California of a widespread infection of the ground squirrels with plague renders this infection of special importance, for infection of man has repeatedly occurred from contact with these animals, and the infection of the ground squirrels is steadily spreading into previously plague-free localities. The demonstration of the spread of the infection of the squirrels to rodents east of the Rocky Mountains renders a knowledge of plague essential to all physicians and especially to the physicians of the South.

Leprosy is frequently overlooked by American physicians because of the idea that it is prevalent only in the tropics or subtropics but it is well known that it occurs sporadically in many parts of the United States and especially in Louisiana. The

writer is personally cognizant of an instance in which a leper acted as a servant of several physicians attached to a large hospital for a period of over two years, handling their bedding and clothing and waiting upon their table, and the condition was not recognized despite the fact that his face was covered with numerous leprotic tubercles, the case being thought to be one of lupus. This well illustrates the prevailing ignorance regarding leprosy and emphasizes the importance of a knowledge of this infection to physicians.

DISEASES CAUSED BY FILTERABLE VIRUSES

Yellow fever and *dengue* are the most important of the filterable virus diseases to Southern physicians. The unceasing vigilance of our quarantine authorities has prevented the introduction of *yellow fever* into this country since the last epidemic in New Orleans, in 1905, but our increasing intercourse with the countries in South America in which there are endemic areas of this disease, especially through aerial travel, exposes this country continually to the introduction of this infection.

A knowledge of dengue fever is important because it has been almost invariably the case that the first cases of yellow fever occurring in a community have been diagnosed as dengue fever. Dengue fever is endemic in the Southern States and a severe epidemic occurred in Florida last year. The resemblance of mild cases of yellow fever to dengue renders a thorough knowledge of both diseases essential to every practicing physician in the South in order that a differential diagnosis may be made and the proper step be taken to prevent epidemics.

DISEASES CAUSED BY SPIROCHETES

Of the spirochetal infections, *relapsing fever* is of greatest importance to Southern physicians and it is now known that this disease occurs much more frequently than has been supposed. In Texas, especially, relapsing fever is not infrequently encountered but it is more than probable that it occurs throughout the South wherever the transmitting tick occurs, and that it is unrecognized clinically. It is a moot question whether some of the numerous cases diagnosed as "undulant fever" on clinical signs and symptoms alone, have not been, in reality, cases of relapsing fever. A knowledge of the methods available in the

differential diagnosis of these infections is most important.

DISEASES CAUSED BY HELMINTHS

In the South infections with certain worms are very common and of these, infections with the hookworm, *Necator americanus*; with the round worm, *Ascaris lumbricoides*; and the strongyloid worm, *Strongyloides intestinalis*, are the most important. It is really surprising to learn of the nebulous ideas that many physicians have of the importance, symptomatology and modern methods of treatment of these common helminthic infections, and their microscopical differentiation is still a *terra incognita* to the average practicing physician. This is largely because of the widespread neglect of the microscopical examination of the feces which is prevalent throughout the United States. A thorough knowledge of helminthic infection is essential to the physician of the South as such infections are much more common in the Southern States.

I have not touched upon the disorders of nutrition, as *beriberi*; *pellagra* and *scurvy*, or the *mycotic infections*, all of which are of much interest to Southern physicians, as time forbids, but enough has been said to indicate the importance of tropical diseases to Southern physicians. A knowledge of these infections cannot be obtained by simply reading descriptions in textbooks but must be based upon actual work in the diagnostic laboratory and the study of clinical cases. Owing to the specialized nature of the subject, and the large amount of laboratory work connected with it, special courses in tropical medicine are now given in some medical colleges and the subject has become a recognized part of the medical curriculum. This movement for the study of these infections should be encouraged, for it is not a matter of doubt that, with the constantly increasing facilities for commercial penetration of the American tropics, the Southern physician will be brought more and more into contact with infections hitherto largely confined to such regions and the knowledge he may gain from the study of tropical medicine will become more and more valuable to him in the course of time.

The National Committee for Mental Hygiene, 50 West 50th Street, New York City, wants copies of all programs of psychiatric meetings for its files. This is in collaboration with the American Psychiatric Association.

SEX HORMONES IN GYNECOLOGY*

The Clinical Value of the Present Preparations

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During the past fifteen years there has resulted a delineation of our knowledge of endocrinology which has been so far-reaching and so fundamental that it has surpassed and unparalleled the productiveness of any similar span of years in the history of medicine. During this time many of the enigmas of sexual physiology have been solved. The pituitary has come to occupy a primary rôle as the integrator of function of all the glands of internal secretion. The gonads have been shown to owe their rhythmic functions to such pituitary regulation.

In the past five years we have learned much concerning the chemical nature of the sex hormones. Both the two hormones of the ovary and the hormone or hormones of the testis are sterols whose structural formulas have been identified and whose chemical similarity to each other is striking. Less is known concerning the hormones of the anterior pituitary which are concerned with the function of the gonads. It is assumed generally that there are two such principles, one concerned with the elaboration of the ovarian hormone, *estrin*, and the other with the corpus luteum principle, *progestin*. The true chemical nature of these gonadotropic principles has not been identified but it is thought to be of protein character.

Regardless of these important contributions to our knowledge of sex endocrine physiology, pharmacology and pathology, we find ourselves sorely confused as to the therapeutic possibilities of these various active principles. There are many reasons for our therapeutic dilemmas. The impatience of all of us to secure a means of treating conditions which have responded so poorly in the past has led us too infrequently to cavort in our therapy far ahead of the safe confines of our basic clinical knowledge. We are prone to

find ourselves too busy to study the numerous reports of significant advances and to attempt to evaluate these in terms of our time-tested knowledge. Uncritical clinical reports disarmed too often our critical skepticism. Some of the commercial purveyors of scientific information have a way of securing our professional confidence and of imposing uncannily upon our clinical credulity. It is my purpose to review in a critical manner what worthwhile information we have at present regarding the clinical value of these preparations of sex principles.

At the very beginning of this discussion admonitions should be urged in regard to some of numerous preparations which are offered for sale. Before employing any preparation the least the clinician can do is to ascertain the following information: reliability of the manufacturer, source of the preparation, method of bio-assay, potency of the preparation in terms of units familiar to the clinician, effect of the principle on the experimental test animals, the supposed effect on the human, the results obtained by competent and critical clinicians from the employment of the preparation in question in similar conditions and the indicated dosage and method of administration.

OVARIAN PRINCIPLES

Two active principles have been attributed to the ovary: *estrin*, presumably a product of granulosa cell activity and *progestin*, thought to be a product elaborated by the lutein cells.

Estrin has been assayed by its ability to produce estrus with typical histologic changes in the vaginal epithelium of the immature or of the castrated rodent. In addition to this striking effect there are others observed in these animals: intense congestion and proliferation of the endometrium, enhancement of uterine contractility, hyperplastic changes in the cervix, secretion of certain cells of the tubal epithelium with some effect perhaps on the contractility of the tubal musculature, proliferative changes in the ductular and alveolar systems of the mammary glands, the depression of gonadotropic activity of the pituitary, vascular changes in the endometrium, and the stimulation of the mating instinct.

Progestin is assayed by its ability to produce a progestational reaction in the endo-

*Read before the Fifth District Medical Society, Atlanta, April 29, 1937.

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metrium of either an immature or castrated animal. In addition, however, it produces other changes in experimental animals; mucification of the vagina, inhibition of uterine contractility, progestational and decidual reaction in the tubal epithelium, completion of alveolar proliferation of the breast, protection and prolongation of pregnancy and depression of the gonadotropic function of the anterior pituitary.

ESTRIN

There are numerous estrogenic substances. At the present time there are four such principles being employed rather generally in therapy: dihydroxyestrin, ketohydroxyestrin, trihydroxyestrin and estrin glycuronate. The first three are forms of free estrin; the latter is a conjugated form and as such is employed by mouth. A synthetic benzoic acid ester of dihydroxyestrin is employed also. No one is privileged to say that any one of these principles represents the identical active principle involved in endocrine physiology.

These preparations at present time are standardized and their potency expressed in terms of the international unit of the League of Nations.

There are certain conditions in gynecology for which the employment of estrin therapy seems rational because of reactions observed in experimental animals. Estrin has been employed in the treatment of gonorrheal vaginitis in children and in the treatment of senile vaginitis because of its observed ability to induce active vaginal proliferation. It has been used in atrophic and arrested proliferative phases of the endometrium associated with amenorrhea and menorrhagia because of its ability to produce endometrial proliferation. It has been used in atrophic and arrested proliferative phases of the endometrium associated with amenorrhea and menorrhagia because of its ability to produce endometrial proliferation. It has been suggested as a possible abortifacient since it has been observed to produce or enhance uterine contractility in test animals. It has been recommended in treatment of uterine hypoplasia, particularly in those instances where dysmenorrhea is a presenting symptom, because of its apparent ability to induce uterine growth and hypertrophy. It has been employed in the treatment of hypoplasia of the breast because of

its production of proliferation of breasts in experimental animals. It has been administered in menometrorrhagia of anovulatory type because of observed effects on the vascular tree of the endometrium in laboratory animals. It has been used in frigidity because of its known ability to stimulate or to arouse the mating instinct in experimental animals. Its employment in symptomatic menopause seems rational since it has been shown in the laboratory to depress the gonadotropic activity of the anterior pituitary, the abnormally high level of which function is considered by many to be casually related to the severe clinical symptoms occasionally encountered.

We shall now consider critical clinical observations which have been made following therapy in these conditions in which the indications for the exhibition of estrin seem rational.

Gonorrheal Vaginitis in Children: R. M. Lewis¹ has shown that cornification of the immature vaginal epithelium can be produced in these cases. Associated with this change the course of the disease is influenced beneficially. Lewis believes that the clinical improvement is the result not so much of the mechanical factors but of the deposition of glycogen in the vaginal epithelium with a definite increase in vaginal acidity. The estrin has been given by hypodermic, by mouth and by vaginal suppositories. The induced changes in the vaginal epithelium are said to regress within six to eight weeks after discontinuation of treatment. No harmful effects upon other systems have been observed from the dosage necessary to induce the vaginal change, although occasionally some hypertrophy of the breasts has been noticed. Our results in treating this condition have been similar to those described by Lewis. In the older child a chronic infection of the cervix may vitiate the effectiveness of such therapy.

Atrophic Vaginitis: M. E. Davis² has observed that in this condition healing is associated with the induction of an active epithelial proliferation by estrin. It is said that the cornification produced in such cases disappears within six to eight weeks after treatment is discontinued. We have had good results from estrin therapy in such conditions.

Atrophic and Arrested Proliferative Phases of the Endometrium: Clauberg,³ Kaufmann,⁴ Elden⁵ and Werner⁶ have shown that active proliferation of the atrophic endometrium of castrates followed treatment with estrin. Bleeding often followed cessation of such treatment. No one regards such bleeding as being true menstruation.

Induction of Abortion: Robinson⁷ and his coworkers were unable to induce abortion despite the fact that a total of 6,800,000 international units of estrin were given in individual doses every eight hours for 34 injections with supplemental treatment with fractional doses of pituitrin.

Uterine Hypoplasia: A moderate degree of enlargement of hypoplastic uteri follows estrin therapy. This may be appreciated by pelvic examination, by measuring uterine depth or by uterography. Such enlargement is due primarily to pelvic congestion; it is not true uterine hypertrophy and disappears promptly when treatment is stopped.

Dysmenorrhea when associated with such uterine hypoplasia is affected favorably in some instances by such treatment. One would expect the intense pelvic congestion resulting from such treatment to vitiate in many instances any beneficial effects on the dysmenorrhea.

Hypoplasia of the Breasts: Large doses of estrin produce fullness, a sensation of congestion, and an apparent increase in the size of atrophic breasts. An active nipple reaction may be observed and in some instances some secretion has followed treatment. Rapid regression follows cessation of therapy with little if any permanent enlargement.

Menometrorrhagia of Anovulatory Type: Despite statements to the contrary we⁸ have observed repeatedly that doses of estrin comparable to those necessary for endometrial proliferation in the castrate will stop uterine hemorrhage promptly when it is occurring from an anovulatory type of endometrium. We believe the mechanism of such action is related to changes induced in the tonus and permeability of the components of the vascular bed of the endometrium. Such an effect is temporary and if treatment is prolonged abnormal proliferative phases of the endometrium may result. We have seen instances in which an arrested estrin phase of

the endometrium was transformed into a phase of prolonged acyclic estrin action, commonly called cystic hyperplasia of the endometrium. It seems unreasonable in these cases to attribute such a prompt effect to estrin depression of the anterior pituitary.

Menopause: We believe that estrin therapy is specific in certain instances of symptomatic menopause. We are aware of the insinuations of psychotherapy advanced by some clinicians whenever the foregoing statement is made. We class patients presenting symptoms of functional vasomotor instability at the time of menopause into two groups: the first is that group which is relieved by the institution of a rational hygiene of living, by reassurance as to the nature of the change through which they are passing and by the sympathetic exhibition of mild sedatives or of estrogenic principles in small doses; the second is that group which does not respond to such handling but requires the exhibition of large doses of estrogenic principles by hypodermic for a week or ten days before any benefit is observed. Albright⁹ has shown that in these patients relief of the subjective symptoms and a decrease in the concentration of gonadotropic principle in the urine parallel each other. We believe with him that the depression in the gonadotropic function of the anterior lobe induced by large doses of estrin in this second group of patients constitutes specific therapy.

Effect on Libido: We do not believe that estrin offers a physiologic method of correcting frigidity. The basic causes of such a condition lie in the realm of psychology, sexology and gynecology rather than in that of endocrinology. There is no doubt that large doses of estrin produce an intense pelvic congestion and thereby may bring about a temporary aphrodisia acting similarly to other aphrodisiacs. Such an effect is not physiologic and disappears soon after treatment is discontinued.

PROGESTIN

While there are many estrogenic substances widespread in nature there has been found as yet to be only one principle which produces a progestational reaction.

The potency of solutions or extracts of progestin is expressed, as a rule, in terms of the international unit of the League of Na-

tions which is the equivalent of 1 mg. of crystalline progesterone. One international unit is equivalent roughly to one Allen-Corner rabbit unit and is said to be about three times as strong as the Clauberg rabbit unit.

A thorough appreciation of the clinical effect of progestin has been hampered by its scarcity and by the expense of the available preparations. One is safe in saying that no one clinician has used enough of it at the present time to formulate any definite opinions as to its value. It is likewise reasonable to infer that unless material improvements in methods of its manufacture and marked price reduction are effected it will never constitute a definite practical aid in therapy.

Certain conditions in gynecology would seem amenable to progestin therapy in view of certain responses observed in experimental animals. Progestin has been employed in the treatment of certain anovulatory phases of the endometrium, associated with menorrhagia or amenorrhea, because of its theoretical ability to induce a progestational reaction. It has been advised in habitual and threatened abortion and in so-called spastic dysmenorrhea because of its ability to quiet uterine contraction and to effect uterine relaxation in laboratory animals. Progestin has been suggested in certain instances of functional anovulatory menometrorrhagia because of its apparent ability to depress the gonadotropic function of the anterior pituitary.

Atrophic and Arrested Proliferative Phases of the Endometrium: Kaufmann⁴ has shown that a progestational reaction can be induced in the human castrate following the induction of a proliferative phase by estrin therapy. Bleeding following such treatment is thought by him to be similar to menstrual bleeding. Elden⁵ was unable to confirm these results.

We⁸ have observed that the employment of progestin in doses comparable to those used by Kaufmann failed to stop active hemorrhage in patients bleeding from an estrin type endometrium. In fact, in certain instances the bleeding became more profuse after progestin treatment. The endometrium following such treatment showed no evidence of progestational change. On the other hand, where active bleeding was controlled with estrin and then large doses of progestin employed, we have observed in the endometrium

subsequent to treatment in some cases patchy areas of progestational reaction. In these instances, however, bleeding recurred despite continued progestin therapy and was observed to be associated with some degree of tissue shedding. Where such bleeding again became excessive, the combined treatment was repeated. Theoretically, the final result to be expected from such treatment would be at the best little more effective than curettage unless a beneficial depression of the function of the anterior lobe had resulted. Such an effect might put the ovaries at rest temporarily and allow for a restitution of a more normal ovarian response later. The clinical observations in an occasional patient so treated have led us to believe that such a secondary effect on the ovary may occur.

J. S. L. Browne tells me that he has approached the problem differently with beneficial results. He agrees that large doses of progestin will not stop excessive bleeding in these cases once it has begun. He finds that if patients are given large doses of progestin in the nonbleeding phase they bleed within several days after cessation of such treatment. Such bleeding may assume excessive proportions. On the other hand, he has found that if these patients first are curetted and then, after two to three weeks have elapsed, are given progestin in large doses a rather normal type of flow occurs. If subsequently progestin be given at three or four week intervals these patients may experience rather regular intervals of bleeding. Unfortunately, since he has made no endometrial studies following such treatment, he cannot be sure that such bleeding is associated with progestational responses of the endometrium. He has as yet no data regarding the course of such patients after discontinuance of treatment. Such therapy seems to offer a rational way of tiding over many young patients with this type of menorrhagia. The expense and scarcity of progestin make this method of treatment out of the reach of most of our patients.

Habitual and Threatened Abortion: Krohn¹⁰ and his coworkers have reported favorably upon the employment of small doses of progestin in the treatment of habitual abortion. They have reported that 1 mg. of progestin will protect the uterus against the oxytocic effect of 1 cc. of obstet-

rical pituitrin. They have recommended the employment of 1 international unit of progestin given 2 to 3 times a week up until the period of viability of the child has been reached.

Using such a method of treatment we have had some encouraging results. In two instances where there had been many repeated abortions and no term pregnancies, in one instance 8 abortions and the other 7, living children were obtained following treatment. We have been hesitant to attribute the success of such treatment entirely to progestin for in treating such cases we emphasize bed rest, advise avoidance of any strenuous exercise, interdict intercourse, and employ thyroid extract to tolerance. In regard to the treatment of threatened abortion the results have been quite unsatisfactory. It has been our experience that once definite uterine contractions had begun or once bleeding had occurred, the treatment was without value.

We have observed instances in which patients with dysmenorrhea received some relief from the premenstrual exhibition of small amounts of progestin. Such treatment has proved of no permanent benefit in our hands and the dysmenorrhea recurred after cessation of treatment. Furthermore, there were observed more patients who failed to get relief than those who did, despite the fact that only functional dysmenorrhea was treated.

TESTICULAR PRINCIPLES

It may seem rather strange to find included in this discussion the androgenic or male sex principles. It is known, however, that such principles may be recovered from the normal urines of female and from the urine of pregnancy as well as from the urine of males and from testicles.

Recent chemical studies have isolated a number of sterole having androgenic function which are quite similar chemically to estrin and progestin.

Recently I have employed one of the androgenic principles, testosterone propionate, in the treatment of a small number of patients with functional and anovulatory bleeding. It has been observed in these few cases that bleeding decreased and ceased within five to seven days of such treatment. Since this observed stoppage of bleeding is much less prompt than that observed after

estrin therapy we have been inclined to attribute this effect to probably depression of the anterior lobe rather than to changes induced in the sterole level. None of the patients has been observed sufficiently to draw any conclusions as to the permanency of such apparent benefit nor has any information been derived to indicate any definite histologic changes induced in the endometrium. Such treatment theoretically may offer a way of putting the ovary at endocrine rest by temporary depression of the gonadotropic function of the pituitary. It may be found with further study that androgenic substances have a place in the sex endocrine physiology of the female.

ANTERIOR PITUITARY AND ANTERIOR PITUITARY-LIKE GONADOTROPIC PRINCIPLES

There are in general two types of gonadotropic principles. One of these is derived from chorio-placental activity and depends upon the presence of a functioning pituitary for its effect. The other class of principles is derived directly from the anterior pituitary or from the serum of the pregnant mare, is active in hypophysectomized animals and apparently represents a true pituitary principle.

There is unfortunately much confusion as to the methods of assay of these preparations. There are in employment at present at least four different methods for determination of potency and four different types of units. Bio-assay may make use of the induction of vaginal estrus, the formation of corpora lutea recognized microscopically or grossly, the production of mature follicles without corpora lutea, or the induction of weight changes in the ovaries of immature rats or mice as the end points for determining gonadotropic action. We have found in some instances that if one were to consider all rat or mouse units to be of the same value, variations of as much as 4000 per cent would result in the apparent potency of some extracts available commercially. Such a state of affairs is extremely misleading to the average clinician. We are in sore need, at present, of some commonly accepted unit for these principles. Until such a unit is available I would suggest that where the preparation is to be used clinically for luteinizing effects cer-

tainly, that the clinician insist that the preparations employed by him have their potency stated in the terms of the rat unit, arrived at on the basis of the production of corpora lutea in the ovaries of the immature rat.

These principles have been found to induce in the ovaries of the immature rat or mouse full adult activity with the production of follicle maturation, ovulation and the formation of corpora lutea. Ova can be found in the tubes of such animals. The uterus becomes enlarged and distended with fluid. Vaginal epithelial changes typical of estrus occur and the vagina opens. The changes in the uterus and vagina are due primarily to the production of estrin as a result of the follicle stimulating effect of such principles. Those principles which are prepared directly from anterior pituitary or from the serum of the pregnant mare produce a more constant change in the weight of the ovaries, less hemorrhage, and more corpora lutea.

There are certain conditions in gynecology for which the employment of these gonadotropic principles seems rational because of the effects observed in experimental animals. Such therapy in certain hypogonadal syndromes, whether they be primary or secondary, would seem rational for the purpose of completing the development of hypoplastic ovaries and to initiate in these normal cyclic exocrine and endocrine functions with the elaboration in physiologic amounts of the two ovarian hormones. Such therapy is founded upon the hope that by an adequate production of these hormones, chiefly estrin, the various somatic and sexual stigmas may be erased and that a full state of sexual maturity may result. In addition, certain hypofunctional conditions of the ovary, theoretically would seem to be amenable to such therapy. Menometrorrhagia, as well as amenorrhea, is regarded frequently as symptom of such alteration of ovarian function. The aim of such therapy is to initiate in the ovary cyclic and physiologic responses. Frequently in such cases only varying degrees of follicle maturation are occurring.

Hypogonadal Syndromes: In our experience little if any material benefit results in classical hypogonadal syndromes from gonadotropic therapy. What amelioration of the physical and sexual stigmas we have obtained

has resulted from substitutional therapy with estrin rather than from stimulative therapy with gonadotropic principles. In many instances, no doubt, the parenchyma of these hypoplastic ovaries is incapable of response to stimulation. There is much to indicate, also, that the doses employed so far have been inadequate.

Hypofunctioning Conditions of the Ovaries: A large part of sex-endocrine therapy has been concerned with the employment of gonadotropic principles in the treatment of amenorrhea, menometrorrhagia and functional sterility, these treatments being founded upon an arbitrary incrimination of hypofunctioning states of the ovaries.

Unfortunately, we find ourselves often so endocrine conscious that we tend to forget the medical and gynecologic associations of these symptoms. I am convinced firmly in the majority of instances considered to be functional that the ovary fails in its endocrine functions because of local pelvic factors. These include pelvic congestion, low grade pelvic cellulitis, salpingitis, displacement of the uterus, prolapse of the ovary, infection of the ovaries, and interferences with ovarian blood supply due to torsion, tumors, or varicosities. From these factors there often results an edema and thickening of the ovarian tunica. Such a condition interferes mechanically with ovulation and, as a result, a follicular cyst develops which undergoes atresia. The next month a similar situation occurs. Once the terrain is made difficult by these cysts it becomes progressively more difficult for any follicle to mature normally. Despite normal cyclic physiologic stimuli from the pituitary the ovary is incapable of ovulating or forming true corpora lutea.

During the past seven years we¹¹ have carried on studies designed to ascertain whether any evidence could be secured of a gonadotropic effect exerted upon the human ovary by these principles. A total of 75 patients has been studied with this question in mind. Two objective criteria were taken as evidence of such an effect: the induction of a progestational reaction in the endometrium of patients not showing such a reaction prior to treatment; and, the finding at laparotomy subsequent to treatment of recent corpora lutea in the ovaries of patients, not spon-

taneously ovulating. Such observations in patients treated with anterior pituitary principles have been considered of little value due to the smallness of doses employed. The same is true after therapy with principles from the serum of pregnant mares.

The situation is somewhat different in regard to observations after therapy with chorio-placental pregnancy urine preparations. In several instances observations were possible in patients showing anovulatory phases of the ovary who had received in excess of 20,000 rat units of such gonadotropic principles over a period of from 5 to 7 days prior to operation. Of all the patients treated with these preparations, and these patients constituted the greater portion of the 75, we found no significant evidence of any such gonadotropic effect except in the following case:

Case I: A patient 27 years of age, who had experienced irregular menses for several years and who had not menstruated for 42 days, received a total of 21,000 rat units of a gonadotropic principle over a period of 4 days. Laparotomy was necessary on the fifth day. At this time both ovaries were apparently normal and free from cysts except that one ovary contained a well-organized corpus luteum and a maturing follicle, while the other contained one recent corpus luteum which had just ruptured, and another well-organized corpus luteum. All of the corpora by their estimated age could have occurred during the period of administration.

The following case is reported since it shows a negative result despite a higher dosage than in Case I:

Case II: A patient, 18 years of age, had had menorrhagia for 2 years. She was bleeding actively at the time of admission and gave a history of having bled continually for the 45 days prior to admission. She was very anemic; her hemoglobin was 34 per cent. A biopsy of the endometrium at admission showed a late estrin arrest with cystic glands. The patient was given 24,250 rat units of a gonadotropic principle over a period of 6 days. The bleeding was decreased but did not stop. On the seventh day of admission, a curettage was done and no evidence of any progestational reaction was ascertained.

Two general impressions seem justified from these studies. In the first place, we doubt whether a full pharmacologic dose of these principles as yet has been given. It may be that in Case I such was the case. Judging from experiences with estrin we believe that if these principles are effective, the clinical dose of these preparations will be found to be somewhere in the neighborhood of 20,000 and 50,000 rat units. In the second place, we doubt seriously the presence of local pelvic causes, such as we have described, in which

ovaries become cystic and offer mechanical obstacles to ovulation and corpus luteum formation, that a physiologic response can be induced by gonadotropic stimulation.

SUMMARY

Our experiences with the sex-endocrine principles available at present have not agreed with the enthusiastic reports of some clinicians. We find the ovarian principles to be of limited value in a few gynecologic conditions but we have been unable from our studies to attribute any physiologic gonadotropic effects to the principles derived from the anterior lobe of the pituitary or those from the placenta and pregnancy urine.

Estrin therapy is of definite value in the treatment of gonorrheal vaginitis in children and of senile vaginitis due to its direct effect on the vaginal epithelium, inducing proliferation, associated with glycogen deposition and an increase in vaginal acidity. Estrin in large doses is of benefit in the amelioration of severe menopausal symptoms, its method of action apparently being that of depressing the gonadotropic activity anterior lobe of the pituitary.

Adequate progestin therapy is impossible at present due to the scarcity and expense of the commercial preparations. Progestin alone or combined with estrin has been observed to influence, by action on the endometrium and by questionable action on the pituitary, the course of anovulatory irregularities of uterine bleeding.

Gonadotropic therapy: We have observed no evidence that the so-called gonadotropic principles can elicit physiologic responses in human ovaries, even though they have been employed in much larger doses than the average clinician has used. Accordingly, we can attribute no therapeutic significance in gynecology to the present preparations of these principles when administered in the present manner and in the present dosage.

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MEDICINE IN A CHANGING ERA*†

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The present is no moment for the medical profession to be too lazy to think or too slow to act upon the future planning of medical practice. There are today certain groups without medical training who are trying to force their visionary thoughts as the material from which to make a new pattern of medical economics. Added to these groups, who would dominate the medical practice of tomorrow, are the ever rising new cults and the age-old charlatans, both of whom appeal to the superstition and ignorance of the people.

It is believed that a group will appear before the 1937 congress to bring "Health Insurance" as its new pattern of medical economics. This question will be decided, not upon what the doctors want, nor upon what the well entrenched "Social Workers" and other politicians who are making such wasteful inroads into our taxes want, but upon what the people of these United States decide they are going to have. This is why it is important that every medical man in the nation familiarize himself with just what this brand of socialism, "sugar coated" for the public as "Health Insurance," actually means to the people. He should then, through all available channels, make the facts known. The people who are enlightened on the subject do not seem to want it.

In the first place, it isn't health insurance, because the sickness and death rates in the countries where the plan is in operation are higher than in the United States under the present system of medical practice; and in the second place, it isn't insurance because the contributions to pay for it is compulsory—which means taxes. Instead of calling it "Health Insurance," the proper title should be "Sickness Tax."

The plan will provide for less than half the people, i.e., the industrial workers from whose pay envelopes it will be easy to take tax. The farmers, small shopkeepers, profes-

sional men and those who own their own business will not be included. The indigent and unemployed will still have to be cared for by society in general, as they are now, and this will require more taxes. Remember this: Almost half our population are indigent or nearly so. The medical profession is paid for only about one-tenth of the service it renders the indigent.

The proponents of state medicine will have no great trouble in convincing the urbanite of its value. The numerous free clinics and hospitals with the "Come One, Come All" policy, aided and abetted by the gullible physician, ward politician, social service worker and financial investigator, vividly demonstrate to his satisfaction that medical service should be furnished free by the state or national government, and the money saved by this arrangement converted into gasoline for week-end pleasure trips or perhaps a new model radio.

In smaller towns and rural districts the situation at present is different. The local physician knows almost everyone. He requires no intermediary to tell him who deserves charity. He knows—and the deserving are seldom if ever neglected. The physician-patient relationship is personal, and a change could not easily be brought about.

Well known are the broad deleterious effects of socialized medicine on the practicing physician. But what would be the immediate effect on him of such a system in the United States? Temporarily it would tend to stimulate his practice. More patients would come to his office. He would be kept busier than usual. Some enhancement of his revenue would be noticed. For a while the system would herald in a period of seeming prosperity. Only gradually the drawbacks would become apparent. An excessive volume of work at cut-rate fees; widespread malingering with its drain on the physician's time; deterioration of standards; grafting and chiseling to make a decent living; solicitation of patients; making a business out of certifying cases; increased morbidity and mortality, and added competition from cults (any representative of the "healing arts" could be consulted legitimately by insured patients). Unless blocked by the medical and allied professions, the health insurance legislation will

*Read before the Surgical Association of the Atlanta and West Point Railroad Company, Western Railway of Alabama and the Georgia Railroad, Atlanta, March 30, 1937.

†Liberal use has been made of material from the Bureau of Medical Economics of the American Medical Association and from the magazine, "Medical Economics," etc.

be passed at an early session of congress, thus completing the third leg of the Social Security Structure.

A menacing factor that comes from within the very heart of the profession is the careless observance, by some of the hospitals, of the medical practice act. It does not strain the imagination to foresee them offering a flat rate charge for appendectomies, tonsillectomies and obstetrics—the hospital receiving the fee and the patient's gratitude and the doctor getting the experience. Free clinics and charity hospitals are doing a wonderful work. They always have and always will. In many cities, however, the abuses in some of these institutions are flagrant and well known to every medical man.

Other groups that continue to harrass the profession by appealing to the superstitions and ignorance of the people are composed of "new cults" and charlatans. With money to back them, members of these cults have no difficulty in influencing the vote of those of similar ilk who occupy seats of legislative prominence. (The 1937 session of Georgia General Assembly is a fair example of a cult securing political strength to block organized medicine in its effort to improve the standards of education in all forms of the healing arts.)

Today, as always, chalatanism lies in the wake of medical progress. In England, during the era ending with the reign of Elizabeth, covering the entire dynasty of the Stuarts and through the first 40 years of George the third, there were two centuries of brilliant achievement in literature and drama. Medicine, backward for twenty centuries, was just awakening from false theories and throwing off the cloak of ignorance and superstition. From William Harvey to John Hunter a definite development in medical skill was made. During this era, however, quackery flourished to such a degree that many types of cure-all pills, elixirs and appliances were sold. The quack plied his trade in one locality until the arm of the law reached for him, then he would quickly move to another.

Charlatanism seems to be about the same in all eras of the world's history. Eighteenth century Perkins tractors are not unlike the recent Abrams machine or the "spine pounders" neurocolometer; 17th century "elixirs of

life" may be dubbed in our generation "tune twisters remedy" or "Madam Barnyard's pink pills for pale people." Together, the modern cultist and charlatan have organized their efforts, backed by legal standing, to invade the field of medicine. Their unscrupulous methods and absolute ignorance have taken high toll. The radio has supplanted old-fashioned hand bills and itinerant medicine shows of a few decades ago. This marvelous means of communication is, at times, permitted to allow sponsors of dangerous therapy and questionable remedies to attempt diagnoses and advise treatment.

It is not surprising then that over four million pounds of actyl-salicylic acid were consumed in the United States during 1936. Less than one per cent of the amount was prescribed by physicians! Nor is it surprising that the bill to regulate the sale of barbituric acid drugs died in the committee of the General Assembly of Georgia just adjourned. It is therefore the duty of every physician to acquaint himself with all proposed plans affecting the practice of medicine, separating the good from the bad and enlightening the public concerning these plans.

From the outside then the medical profession is confronted with "Health Insurance," new cults, quacks, and unbridled radio's pernicious cure-alls. From within, has any formidable and worthwhile solution appeared? Time will answer that question—but let's briefly discuss some of the more popular plans proposed.

Group hospitalization is making rapid progress and deserves careful study. At present it is estimated that more than 700,000 individuals are members of hospital insurance groups.

Is group hospitalization sound and ethical? In the Feb., 1937, issue of Medical Economics the question is answered as follows: "Testimony from a number of individual physicians and medical societies supports the following conclusions:

"The physician-patient relationship under group hospitalization is not disturbed, and in representative projects, free choice of hospital, by patient and doctor, remains intact.

"Low income patients find it possible to pay their physicians since they are relieved of the burden of a large hospital bill (thereby

reducing the need for tax-supported medical services).

"There is no interference with existing organization of hospital staffs or with the medical judgment of the individual members."

Dr. M. L. Stevens, former president of the North Carolina State Medical Society, says: "I look upon group hospitalization as I do upon accident, health and life insurance, not as a possible entering wedge for state medicine." However, Dr. Daniel P. Griffith, former vice-president of the Connecticut State Medical Society, foresees the accumulation of surpluses by the groups which will bring about additional benefits, including probably services rendered by physicians, since many hundreds of young physicians are, relatively speaking, unemployed, it would be a simple matter to make arrangements for providing medical care at nominal fees.

It seems then that a plan to be workable should contain at least these three principles:

1. The exclusion of all types of medical service—specifically laboratory, roentgen-ray and anesthesia. (This to be clearly emphasized to avoid misunderstanding as to what constitutes medical care.)

2. Active inclusion of the county medical society in the program of organization.

3. Admission of patients to hospitals only on recommendation of their physicians. (The above plan was adopted by Pennsylvania State Medical Society.)

It is believed by many people that group hospitalization offers the average man better protection than medical reimbursement insurance.

It is less expensive and pays for a larger percentage of service rendered for either illness or injury. People who can afford a combination of the two have found it an excellent way to meet the costs of disease and disaster.

With that combination only one medical obligation is not covered—fees to the physician for treatment of sickness. However, in some localities medical societies have inaugurated a monthly prepayment plan whereby people in the low income group are assured that the physician of their choice will be paid. This feature in itself deserves some attention

when we find that last year not more than 75 per cent of medical bills were collected successfully. In addition to the enormous debt represented by outright free services, the American physician had to write off more than a quarter of all the fees due him from his paying practice. Thus group hospitalization and also a prepayment medical service plan have been offered as an effort to help in the revival of the failing economic system.

The groups that offer "Health Insurance," the cults and charlatanisms, are built upon bargaining. The practice of medicine has a cherished and unique history. No other profession, science or industry has ever been organized upon a code of conduct. This code need not be changed, for it was not reared upon competitive gain, but upon moral principles and ethics that have remained unshaken for over 2300 years. It has been said that the moral debacles which have occurred in industry, public utilities, banking and so on have not taken place in medical practice, and will never take place as long as physicians follow the precepts of the Hippocratic code. Followers of this code are in a continual struggle for a better understanding of life, illness and death. Such devotion to duty being exemplified in the individuals who follow the teachings of a noble profession—incomprehensible to those who "drive a trade"; who do not understand the sacred obligation of physicians to their patients.

As a nation we may be sentimental, but we are also practical. We do not suddenly cast out good policies nor scrap institutions which have fulfilled good purposes, but we are ever desirous of adding things of proved worth, recognizing that there are values in individualism that transcend collectivism. They are the values of our deeper emotions, of our pride in our profession, of our cultural desires; and it would be intellectual death to relinquish them. Let us be ever alert and mindful of medicine's position in this changing era, and let us make a supreme effort to preserve forever, *individualism*, that ancient and treasured heritage of our profession.

The American Congress of Physical Therapy will hold its next session at the Netherland Plaza Hotel, Cincinnati, Ohio, September 20-24, 1937. Physicians, their assistants and nurses are urged to attend.

PRACTICAL ASPECTS OF HUMAN GENETICS IN MEDICINE*

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Augusta

In presenting the following discussion I must begin with the statement that I realize that I have violated the first tenet of science. I must admit a prejudice in favor of the subject. My early training was under the influence of pure geneticists. In the medical school I found little use for my knowledge of the behavior of genes. But at present the medical profession is becoming more hereditary conscious as fundamental etiology is advanced by social experiment in European countries. Hence, it is timely to coordinate the various points of view held by medical men on the rôle played by inheritance in the production of disease.

Crew, a geneticist, claims that at least 500 human traits show some evidence of a definite pattern of inheritance. A knowledge of such traits has in some instances already proved a valuable adjunct in establishing correct diagnoses. Macklin¹ lists a series of such cases. One patient was refused life insurance because of a glycosuria. History revealed an orthoglycemia in her mother, hence the diagnosis was not diabetes. A boy had a lump on his arm. His first physician diagnosed the condition sarcoma. A second physician considered the growth to be multiple exostosis. The father was examined, found to have the same thing. The arm was saved. Another patient showed dry skin, sparse hair and an absence of a lateral incisor. Diagnosis, hypothyroidism. But thyroid extract made the patient worse. A second physician recalled that the mother lacked the lateral incisor and advanced the diagnosis of congenital ectodermal dysplasia. A patient showed an ulcerative corn that refused to heal. One doctor x-rayed the spine and found an occult spina bifida. He had previously treated a brother for a more obvious anomaly of the same type.

A second practical application of the genetic principle may be made if, when a hereditary condition is recognized in one member of a family, *the sibs be examined periodically*

for the same conditions, e. g., congenital migraine and telangiectasis of the brain, neurofibroma acoustica, amyotonia, familial retinitis, etc.

A third practical outcome of genetic studies is in *building up a satisfactory classification among disorders where etiology is obscure*. Thus the various types of ataxias may be sifted from such conditions as multiple sclerosis, since some are familial and others are not.

There is at present a tendency among many physicians to give a still broader significance to the hereditary factors in assuming a *gene controlled constitutional principle which accounts for specific susceptibility to disease*. We frequently hear of the heredity of arteriosclerosis, diabetes, asthma, rheumatism, tuberculosis, gout, leukemia, psoriasis, pernicious anemia, gastric ulcer and cancer. In relatively few cases, however, is a Mendelian phenomenon apparent and only a familial tendency is noted. But the other etiologic factors are considered the more important by the practitioner since they alone are subject to treatment in the individual, and the hereditary factors have no more than an academic interest.

Thus the postulated etiology of arteriosclerosis includes toxins of infection, rheumatism, arthritis, chemical poisons, as lead and alcohol; dietary imbalance in salt, cholesterol, proteins, high fats, endocrine disturbances, as pituitarism; hyperthyroidism, diabetes, epinephrin dyscrasia; vitamin imbalance, vasomotor disturbances, nephritis, and mechanical aging. There is little wonder that Williams² took thirty pages to discuss the evidence for and against a hereditary taint in this condition. O'Hara³ and his co-workers, in 1924, found a familial incidence of 76 per cent. Weitz⁴ found in 82 probands 63 with one or both parents showing heart disease, edema or apoplexy. Moschowitz, however, claims hypertension as a primary factor having an acquired psychic background. Mendelian analysis is impossible in this mass of contributory causes.

Joslin⁵ discusses, under the etiology of diabetes, arteriosclerosis, climate, trauma, endocrinopathies, gallstones, gout, nervous disposition among Jews, infection; and a main provocative force, obesity. That there is a hereditary factor seems indicated by the

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fact that he found simultaneous occurrence in 9 of 13 sets of identical twins, while only 2 of 12 sets of fraternal twins showed the condition. He noted a greater incidence among blood relatives (6.7 per cent) of diabetics than in the general population (1.23 per cent). Specific cases showed an approach to a Mendelian recessive and expected ratios were predictable on presumable latent cases. He summarizes, however, with the statement that in a *multiple etiology there can be no specific pattern of inheritance*.

Conditions become even more confusing in the so-called inheritance of infectious diseases and in allergic conditions. An inheritance of susceptibility to tuberculosis is generally accepted. But the high familial incidence has also been explained on the basis of proximity. Rheumatism, according to Pemberton,⁶ shows some indication of a hereditary trait. In a review of 1,100 cases special inquiry was made in 142 and 58 per cent of these gave a familial history. But in a disease where the classification is not yet satisfactory and where the manifestations are so diverse, Mendelising ratios are not to be expected.

Cooke and Spain⁷ in 796 cases found 58 per cent parents allergic among their asthma patients against 7 per cent parents allergic among the normal population. Balyeat⁸ has found in 1,117 normals a family history of hay fever in 8.3 per cent while among his hay fever patients the family incidence was 60.1 per cent. He considers the condition a simple dominant. However, specific sensitivity is not inherited. Asthma, hay fever, migraine and eczema are interchangeable in his genealogies. Few geneticists would be satisfied with such an analysis. Ratner⁹ found little support of a hereditary hypothesis among 250 allergic histories, including several sets of identical twins.

Psoriasis. Bernhardt found a family in which both parents and all of the children were psoriatics. Bauer and Vogt¹⁰ consider the occasional association of arthritis and psoriasis to be a hereditary syndrome. Dermatologists in general are evasive on the subject of etiology. My interpretation is that it is a vitamin D deficiency based on an individual idiosyncrasy.

Gout, a common disease among the rich in the past, gets a genetic consideration in every modern text. Is the decline in the number of cases of gout during the past century due to outbreeding or sterility in prosperous bibulous families? I think not. Rather it is due to the abandonment of the practice of bleeding by the medical profession.

Pernicious anemia. Thomas¹¹ reports the simultaneous occurrence of this disease in each of identical twins, aged 61, who had been separated for 16 years. Familial incidence is common. One patient with whom I am familiar showed an initial eruption and tingling in the palms. The son is worried for fear that he will develop the disease because he has lately shown small papules on the hands. The grandmother was known to have died of an anemia. Here is a type of case which might be considered genetic. But it may have quite another interpretation. Time will tell.

Heredity of Cancer. Outstanding among the voluminous literature on this subject is the family studied by Warthin. Hauser and Weller¹² have reported on the last two generations. Forty-three primary cancers have appeared in 41 individuals in a total population of 305. Since only 174 are 25 years old (cancer age) this gives an incidence of 23.6 per cent. The sites are rather specific. Twenty-six have occurred in the gastrointestinal tract. Two branches of the family have shown no cancer. The conclusion of the authors is that a Mendelian implication is not justified but that a hereditary tendency is.

Martynova¹³ has reviewed the family history of 500 cases of cancer of the breast. His conclusions are that heredity plays a definite role in specific predisposition, associated with a general predisposition; a monohybrid recessive is not involved. The number of genes, mode of inheritance and role of environment are not established, but he believes that a Mendelian dominant is involved.

A complete discussion of the various etiologic factors in tumor formation would be out of place in this article. But we may briefly consider, as an example, the multiple hypotheses attempting to explain teratoma. These include fertilization of polar bodies, development of isolated blastomeres, par-

thenogenesis of aberrant sex cells, I believe that I have successfully shown that the organizer theory is the more logical. This is of interest since Waddington¹⁴ has developed a theory of cancer on the same ground; yet Bagg¹⁵ has recently produced teratoma in the fowl by injecting zinc chloride into the testes. We may summarize this section by saying that we are far from a satisfactory explanation of the cause of new-growths, but that genetics offers one method of approach to the problem of etiology. Probably the most hopeful phrase in the whole discussion is that of Hunter¹⁶ who, after an extensive review, concludes that: "With one cancer in the family, no one need fear a predisposition to the disease." This idea alone would justify all of the research done on the subject.

It is evident to all students of genetics that the human race offers little opportunity to establish broad biologic principles. Pure Mendelism is rare. Multiple factors, twenty-four pairs of chromosomes, absence of selective mating, endocrinal determinism, longevity, idiokinesis, difficulty in collecting data and confusion in diagnosis, all tend to obscure expected ratios. As an example of this, one need only to refer to Entre's criticism¹⁷ of the work of Davenport and Munsey on the inheritance of Huntington's chorea.

Yet occasionally certain syndromes seem to show linkage, the outstanding fact on which Morgan's chromosome maps were built. Bauer¹⁸ considers polydactylism, retinitis, obesity and hypogenitalism to be linked. Aschner¹⁹ thinks that the simultaneous occurrence of dystrophy of the nails and congenital absence of the patella or absence of the head of the radius may be linked. Trauner and Rieger²⁰ believe that both conditions are due to one pathologic gene. Still another explanation may be postulated. In a case of so-called hereditary agenitalism, Perkins²¹ has shown three generations of menstrual disturbance, absence of pubic hair and infantilism. They may represent a fundamental endocrinopathy which may not necessarily have a genetic background since endocrinal influence in utero is known.

Again, inheritance may not be entirely genal. MacDowell²² has discovered a type of

leukemia in mice that is transmissible when a certain inherited constitution is present. His last analysis shows two types of inheritance, one genic, the other cytoplasmic.

In spite of all confusion it still seems justifiable to assume a general inheritance of structural and functional defects and in those diseases showing a high familial incidence, where a more specific etiology is not established, "hereditary taint" is an acceptable medical term and should be examined in all history taking.

With the foregoing considerations in mind we may next pass to the current tendencies in social experimentation. We will not concern ourselves with positive genetic measures. Since sterilization is directly a medical problem, physicians should acquaint themselves with the operation of the law. The practice is based on the one tenet that heredity of any outlawed condition is an established fact. It must produce results commensurate with the cost, be consistent with political constitutional right, and is only justifiable if the same results cannot be secured by other methods.

The stigmas specifically aimed at by current laws are feeble-mindedness, epilepsy, schizophrenia, dementia, chronic alcoholism, and criminal tendency. In the first four, the evidence for a "hereditary taint" will justify legislation designed to prevent procreation of more unsocial individuals. After sterilization, feeble-minded individuals may be returned to society and thus reduce the expense of their upkeep in eleemosynary institutions. Opposition to this law may be expected, since relatives must assume the cost of care of these non-productive individuals. Furthermore, they may present a further social menace in that they may become the prey of venery in its worst forms.

The procedure in the case of schizophrenics cannot be expected to be very effective since they are already notably sterile (24.9 per cent).

A study of intramural and extramural epileptics made by Paskind and Brown,²³ show a high hereditary tendency among patients in institutions but of 162 extramurals, 342 living children showed only an incidence of 0.29 per cent while 1.7 per cent died in convulsions in infancy. This would seem to indicate that only institutional cases need

be rendered sterile in this class.

Due to a wide distribution of recessive factors in the general population, it is also doubtful whether sterilization will materially effect the proportion of defectives. Berlitz²⁴ investigated the "hereditary taint" in 1807 siblings of 362 officers and employes of a hospital in Saxony. Among them he found a frequency of dementia, 0.41; schizophrenia, 0.79; epilepsy, 0.41; mental depressives, 0.62; psychic personality, 2.40; psychic states, 4.8; alcoholism, 0.08. This indicates the widespread of such taint and shows that nothing short of general sterilization would weed out these conditions, since four generations of close inbreeding are necessary to perfect a character when multiple factors are involved and eleven generations before a homogeneity is produced. Certainly sterilization would be wholly ineffective in such social traits as alcoholism, criminality and prostitution, where environmental factors obscure any innate tendencies. Kemp²⁵ has only recently shown a marked correlation between prostitution and unemployment.

In July, 1933, Germany passed a law effective Jan., 1934 establishing eugenic courts. On voluntary application, or in case of irresponsible persons, the family physician or institutional physician may petition for sterilization. The regional court, composed of a magistrate, official doctor and a practitioner (who has specialized in genetics) may hear petitions. In 1934 a total of 84,525 petitions were filed, 64,409 petitions heard and 56,244 sterilizations ordered; 6.2 per cent of petitions heard were denied. In a population of 65,000,000 this represents less than 0.1 per cent sterilized.

The law has met with some opposition, particularly by Catholics, by social groups advocating personal liberty, and by those who consider the law a reflection on the dignity of the family. Administration of the specific law became involved because it only provides for salpingectomy and vasectomy. Proposal for extension of the law has been made. "Hereditary taint" was made the basis of refusal of marriage certificates; made the basis of divorce. Provision is made for sterilization of all habitual criminals (convicted 7 times) and for "first offenders" if a hereditary taint is shown. Many of these

features are rational unless used for political oppression. Geneologic tables must be provided by all persons seeking marriage loans and by those seeking citizenship.

It is of interest to witness this experimentation. The policy is rather liberal in a country under a dictatorship. There is nothing in it inconsistent with the report of the special committee of the *American Neurological Society*²⁶ which accepts as hereditary, manic depression, dementia praecox, feeble-mindedness and epilepsy. The committee go on record that legislation should provide for voluntary sterilization, but they summarize with the statement that they do not believe a biologic emergency exists in the United States and that precipitous legislation is unnecessary.

In conclusion, I may say as a geneticist, that I expect little from either positive or negative eugenic measures, but as a physician, I believe that genetics offer much in the way of establishing correct diagnoses, and in advancing our knowledge of the etiology of many diseases.

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The National Society for the Prevention of Blindness announces that the Leslie Dana Gold Medal, awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Mrs. Winifred Hathaway, of New York City, Associate Director of the National Society for the Prevention of Blindness. Mrs. Hathaway was selected for this honor by the St. Louis Society for the Blind, through which the medal is offered by Mr. Leslie Dana of St. Louis.

THE ATLANTIC CITY SESSION
OF THE
AMERICAN MEDICAL ASSOCIATION

C. W. ROBERTS, M.D.†

Atlanta

So tremendous has become the annual foregatherings of the Association that one is struck with a sense of utter inadequacy in attempting even a brief resume of its highlights. One frequently hears some confrere remark that the American Medical Association has grown too large to act as a practical clearing ground for current medical thought. We are perhaps in the position of the high school graduate entering the university. The first impression is that the library is just a show place with row on row of books. With some coaching, however, he learns how to use it, how to find what he wants.

I first attended a meeting of the A.M.A. in Atlantic City in 1909. The world was rosy then and doubly so because Mrs. Roberts and I were on our honeymoon. Naturally I remember very little about the meeting except that there was a great concourse of distinguished looking gentlemen hurrying from place to place with serious mien. One of these was the great clinical teacher, the lamented Dr. John B. Murphy whom I heard for the first time discussing the management of empyema. I was profoundly impressed by the clear and convincing, although simple manner, of this renowned teacher. In the light of subsequent years I feel that, although I did not then know how to find my way around the halls of the meeting, I stumbled, as it were, upon a character whose teachings measurably influenced my later efforts. If in fact the annual sessions remain, to the rank and file of our members, just a gigantic medical show, it is opportunities like the above wherein the personality of our great leaders is stamped upon us that make attendance eminently worthwhile. But one may learn to find that particular feature that interests him most.

The meeting opened with a general scientific session addressed on various subjects of interest to all by distinguished teachers. This feature, lasting for two days, is like the mixed

assemblies or the average medical meetings with which we are familiar. Our own Dr. James E. Paullin contributed to this program, presenting before a tremendous audience a lecture on Cardiovascular Syphilis. These meetings grow in popularity from year to year. The seating capacity of the hall is always taxed because the papers are highly clinical and of everyday practical importance.

Now followed the official opening of the scientific sessions, held on Tuesday night in Atlantic City's magnificent auditorium. The great audience of some seven thousand heard addresses by retiring President Dr. Gordon Heyd of New York and the inaugural of Dr. John H. J. Upham of Columbus, Ohio. These were highly significant. The Madrigal Singers from Philadelphia, under the direction of Henry Hotz, gave several numbers evoking riotous applause. The following day the sections began the presentation of their respective programs. Now the meeting resolved itself into fifteen groups, each group concerned with questions pertaining to their individual specialties. These meetings, however, are staggered so that they are not in session concurrently. Thus one may pick papers to his liking and attend where his interest leads him. In the meantime radio programs are being put on by officers and heads of the various bureaus dealing with subjects of lay interest. On Thursday night the reception to the incoming president was held at the Headquarters Hotel. This year's reception was one of rare dignity with receiving lines, low-bending-courtesies, tails, dinner coats, charming women gowned in the season's best but withal unstilted. The theme is democracy and the membership in long lines, whether dressed for great affairs or for an informal evening, meet and greet the president, officers and heads of the various bureaus and committees.

But we must not overlook a feature of this meeting that has grown to take a commanding place in the interest of the visitors. I refer to the great scientific and commercial exhibits. These are herculean. This year space in the world's largest auditorium was taxed to its fullest capacity. Acres and acres of stalls filled with illuminating demonstrations pertaining to scientific subjects and displaying the armamentarium with which the physician supplements his services to the sick.

†Delegate.

This year these features were 20 per cent larger than at any previous session. One may profit by spending all his time rambling among these practical demonstrations with enough profit to repay him for any expense or time loss occasioned by his visit.

The meetings of the A.M.A. are appalling. No wonder we hear our brethren remark that the Association has grown too large. May not the answer be that we need to learn how to take advantage of this annual postgraduate course, the greatest on earth. Out of it, however, whether lost in the maze or orientated so as to pick the high spots, one comes home with a feeling that he has participated in the world's premier showing of scientific medicine and has mixed and mingled with a group of men whose fellowship raises one out of the doldrums of despair over petty affairs and plants his feet again on sure ground. This bolstering of the spirit alone, this whetting of the edge of initiative, is perhaps the most effective result of attendance. The high and low meet together. The spiritual uplift knows no bounds, recognizes no casts, flows over social barriers, resolves all differences. One becomes a part again of American medicine with its traditions and high ethics and comes home resolved to protect and defend his birthright. None can afford to miss these meetings. You will find much that appeals to you, nothing to condone.

But there is another feature of these annual meetings to which I must briefly refer. This great Association is not a ship without an experienced mariner. Its policy-making body is its officers and House of Delegates. I first sat in this august body at another session of the A.M.A. at Atlantic City in 1925. I was then introduced to the men of our Association who guard its destiny with a zeallessness approaching a passion. They hale from the constituent societies—one from each group of 825 or fraction thereof and are, for the most part, picked men with level heads and a love of justice and equity. With the passing years as I have been privileged to move among them, my regard for their great souls has grown apace. They are not politicians, shifting questions of policy behind closed doors. Their deliberations are matters of meticulous record, published in the columns of the Journal and should merit the

careful reading of all the members. Only a sketchy account of this year's session will be attempted.

Representation in the House for the next three years will be on a basis of one delegate for each 825 members or fraction thereof. Through the unremitting labor of our secretary, Dr. Shanks, Georgia retains three delegates. Our delegates are now known and recognized in the House after uninterrupted service over many years. Only continuous service gives the training essential to active participation on committees of reference and that acquaintance necessary to command attention in the debates upon the floor. The practice of our Association along this line should be continued. Momentous questions are before us. Changes, if made, should be after much circumspection. Reports of the various officers and councils were heard. Only one sitting in the House is in position to appreciate the enormous amount of work done by the Board of Trustees, the officers, councils and committees. This service to American medicine is voluntary and without charge to the Association. It cannot be bought with a price. These servants pour their souls into their work. I wish it were possible for the entire membership to know of their sacrifice and to appreciate fully to what degree the stability of American medicine depends upon their discriminating labors. Suffice to say that with the growth of medicine in its scientific and public relations, the responsibilities of the House have expanded in measure. Their wisdom is not exhausted, their courage not bankrupt. They recognize that medicine is in its evolution but refuse to aid and abet radicalism. Evolution rather than revolution is their slogan.

Thus the House has long had before it the question of contraception. It has been importuned to approve this device largely inspired by lay groups. For the first time the House approved the report of its committee which places on the various councils the responsibility for the examination of products used in contraception. It recommends that all physicians inform themselves, that medical schools teach its scientific aspects and that practice be limited to regularly licensed clinics under medical control.

Questions of government in medicine again commands attention. As a special ses-

sion of the House, Senator J. Hamilton Lewis brought a direct message from the President of the United States. This was in the form of a request that the A.M.A. participate in a conference to consider amendments to the Social Security Law dealing with medicine. It is proposed to recognize a sizable group of American citizens belonging to the sub-comfort group as medical indigents, to furnish at public expense medical, hospital, nursing and drug services, and to employ for this purpose regular practitioners licensed by the government. The patient-physician relationship will not be disturbed. Bureaus are to be set up to administer this service. Senator Lewis complained that these bureaus as proposed would place the administration of medical matters in lay hands. He opposed this feature and indicated that the Administration desired the help of the A.M.A. in working out such changes as would be acceptable to the medical profession and in keeping with its traditions and practices. The matter was referred to the Board of Trustees for such action as they deemed wise.

The report of the Secretary was of transcending interest. The membership of the A.M.A. is now more than 105,000, larger by 5,000 than ever before in its history. Likewise the fellowship roll—those who apply and take the Journal—is larger by some 3,000 than ever before.

A new council to be known as the Council on Industrial Health was authorized. This Council will study the relation between working conditions and health with special reference to industrial diseases. "Special recommendations were introduced dealing with motor vehicle accidents, with a change in the methods of choosing the time and place of the annual session, with the prescribing of barbituric acid and derivative drugs, with the campaign against syphilis, with various problems involving governmental action in relationship to medical practice, with the creation of a distinguished service award, with legislation on medical defense, with the practice of ophthalmology, with psychiatric research, and with many other subjects."

Space at my disposal prevents further comments. I have not scratched the surface. Those interested are urged to watch the columns of the Journal for details.

I cannot conclude, however, without expressing my personal pleasure because of the presence of so many Georgia doctors. The larger cities, particularly Atlanta, had their usual quota with a sizable sprinkling from here and there throughout the State. My grateful thanks to the members of the Medical Association of Georgia for the privilege of serving as one of their representatives.

At the concluding session Dr. Irvin Abell of Louisville, Kentucky, was made President-Elect, and San Francisco selected as the 1938 meeting place.

CHRONIC DRUG CYANOSIS

*Self-Medication with Popular Acetanilid
Containing Analgesics**

W. EDWARD STOREY, M.D.
Columbus

Case Report

A 60 year old male (No. 27924) was admitted to the hospital for pain in the left shoulder. This had begun a year previously, was present continually and had increased in severity. Aside from the pain there were no other complaints except progressive weakness and weight loss. A private physician had diagnosed his shoulder pain as arthritis. He denied having had cough, fever and hemoptysis, and there had been no progressive dyspnea and no edema, ascites, or sub-sternal pain. He had taken no medication except 6 to 10 "Stanback" or "B-C" powders daily for 5 to 6 months for the relief of his pain. There was a generalized bluish-gray discoloration of all the skin and mucous membranes; he seems to have given this little attention and therefore could not date its onset accurately.

His past history contained nothing pertinent to the case, and the family history was negative for cancer, diabetes, tuberculosis, nervous and mental diseases. His mother was living at a reputed age of 107 years.

Physical examination revealed a senile, emaciated man whose movements were slow and uncertain. The skin of the entire body including buccal, conjunctival and rectal membranes and the nail beds presented a dusky, bluish-gray hue. There were no scleral or oral pigmentations and no gingival line. There was no metallic sheen, and pressure to the skin at any point resulted in local blanching. He was not dyspneic and there was no edema or ascites. All his joints showed free mobility with passive movement, and no crepitus or enlargement of the joints and no surface discoloration or palpable exostoses. There was a disuse atrophy of the left deltoid muscle. The pulse was 86 per minute, regular and of good volume, and B.P. was 110/82 in the right arm. There was marked generalized arteriosclerosis; the P.M.I. was 9 cm. in 5th I.S. at the mid-

*Case records of the Columbus City Hospital, Columbus.

clavicular line. The lungs were clear except at the left upper third where there was dullness, front and back, with diminished to absent breath and voice sounds and tactile fremitus. There were no rales. Abdominal examination revealed no enlargement of the spleen, liver or kidneys, and no masses, tenderness, or bladder distention. Tendon reflexes were present but sluggish. Rectal examination showed moderate enlargement of the right prostatic lobe without tenderness, and a hard, fixed nodule 2 to 3 cm. in diameter on same side. The presence and probable significance of this nodule was confirmed by several consultants.

Several urinalyses were negative and the erythrocyte count was 2,800,000 with no abnormal cells, except for achromia. Hemoglobin was 55 per cent (Sahli); W.B.C. 13,750. Differential count: polynuclear neutrophils 85 per cent, and lymphocytes 15 per cent. Wassermann and Kahn tests were negative; seven sputum examinations failed to show tubercle bacilli. The blood sedimentation rate (Cutler technic) was 25 mm. for 60 minutes (normal 10 to 12 mm.). Samples of venous blood were unusually dark.

Roentgenograms: Left shoulder showed no disease in the humerus, glenoid fossa, scapula, clavicle or joint space: Lungs: "In upper portion of left lung there is a globular mass about 3 inches in diameter discretely circumscribed and which is more suggestive of malignancy than tuberculosis. (W. F. J.)" This mass was near the periphery, and there appeared to be plural thickening laterally and above.

In the course of a barium study of the rectum and colon no evidence of a prostatic calculus was noted.

At the end of 4 weeks during which time he was given two transfusions and other analgesics were used, the cyanosis cleared definitely but not entirely. He left the hospital and died at home 7 months later of "lung trouble." Necropsy was not obtained due to ignorance of his death. Diagnoses: (1) Drug cyanosis due to acetanilid (methemoglobinemia?). (2) Secondary anemia. (3) Pleuritis over left upper lobe with pain referred to left shoulder area. (4) Prostatic carcinoma with metastasis to upper lobe of left lung.

Comment

Packages of "Stanback" and "B-C" powders were examined; each of the former is stated to contain $2\frac{1}{2}$ grains of acetanilid "and other valuable pain-relieving agents"; the latter is stated to contain 4 grains of acetanilid. If the patient took 6 of the former or 10 of the latter daily, he would have consumed 15 to 40 grains in 24 hours. The epitomized U. S. Pharmacopeia states the dose of acetanilid as 3 grains and adds "It is well to begin with 0.1 Gm. or about $1\frac{1}{2}$ grains, and if necessary, to repeat cautiously." Unfortunately facilities were not available for spectoscopic identification of methemoglobin, or for the degree of oxygen unsaturation.

This case is instructive because: (1) Cyanosis and its ultimate effects may result from the injudicious use of common and allegedly harmless analgesics which are widely advertised directly to the public.

2. Cyanosis in this case is believed to be due to acetanilid, (a drug known to cause methemoglobinemia), because, (a) the patient took 15 to 40 grains daily for 5 to 6 months, (b) heart disease was ruled out by physical examination, (c) polycythemia vera was ruled out by a low erythrocyte count and the absence of splenomegaly, (d) Ayerza's disease was considered but ruled out because of lack of polycythemia, which sometimes exists, and lack of any roentgenologic evidence, (e) Addison's disease was ruled out by a normal blood pressure and a lack of true mucous membrane pigmentation, (f) argyria was ruled out because the skin blanched with pressure, and there was no scleral pigmentation, gingival line, metallic sheen or history of taking silver.

3. *No physical examination of an adult is complete without a rectal palpation.*

4. Pain in a single joint area, especially on the body trunk and without local objective manifestations, should suggest the possibility of its origin elsewhere than in the joint.

511 Swift Bldg.

HONOR ROLL FOR 1937

1. Randolph County, Dr. W. G. Elliott, Cuthbert, September 28, 1936.
2. Dougherty County, Dr. I. M. Lucas, Albany, December 12, 1936.
3. Taylor County, Dr. R. C. Montgomery, Butler, January 11, 1937.
4. Crisp County, Dr. L. O. Wooten, Cordele, January 13, 1937.
5. Wayne County, Dr. A. J. Gordon, Jesup, January 23, 1937.
6. Hall County, Dr. Hartwell Joiner, Gainesville, January 27, 1937.
7. Monroe County, Dr. G. H. Alexander, Forsyth, January 30, 1937.
8. Rockdale County, Dr. H. E. Griggs, Conyers, February 1, 1937.
9. Hancock County, Dr. H. L. Earl, Sparta, February 5, 1937.
10. Morgan County, Dr. W. C. McGeary, Madison, April 20, 1937.
11. Ware County, Dr. Kenneth McCullough, Waycross, April 20, 1937.
12. Decatur-Seminole Counties, Dr. M. A. Ehrlich, Bainbridge, May 7, 1937.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

JULY, 1937

LOOKING FORWARD

Within recent years, particularly since the debacle of 1929, the minds of people do not seem to proceed along the lines that most of us were taught, and believe to be, for the best interests of all. New modes of thought have suggested heterogeneous methods of dealing with social problems that are not new to history but prove a novelty to some members of society. The medical profession has stood aloof from many of the suggested social changes, and has impressed some of us as a bulwark of reliability and strength that should not be discounted. This is well, and as it should be, and places our profession in a disinterested position, our sole desire being to promote the welfare of mankind that life and its interrelations may be enjoyed to its greatest length, and in happiness, comfort and health.

As we gaze toward the future we are aware of much constructive and valuable work to be accomplished; and, to be permitted to work is a glorious privilege. Maternal mortality in our State is higher than for the registration area of the country as a whole. Can we not do something to erase this stigma from our records? We can, and it is our solemn duty to exert every effort to instruct expectant mothers of the necessity for prenatal care. If this one thing could be accomplished more than one-third of the maternal deaths in our State could be avoided. During 1935, 43 per cent of the confinements in Georgia were attended by midwives or others. It would seem that midwives are a necessity in some localities in our State and it behooves us to sponsor measures which may be enacted into laws that will govern their practical training and supervision.

The venereal disease problem is not new but its needless ravages are being brought to our attention, and that of the public, with a forthrightness that would have been astounding a decade ago. Let us lend our efforts to

this campaign—not only follow but be in the vanguard of the procession. To hunt out and treat those already infected is a noble and laborious undertaking but we know that venereal diseases are caused by living organisms and are therefore infectious. Educating people to this fact and instruction as to the evils to be expected in their own, their wives and children's bodies as a result of venereal infection will aid them to repress their passionate desires so that their future lives may not be clouded with the nightmare of "The Sins of the Fathers." It is believed that an educational program begun in the high school years for boys and girls is not too ambitious, and, it is ventured that a competent teacher of this branch would be listened to with far more attention and profit than some of the subjects taught in our schools. It could be made part and parcel of the course in physiology.

Our third objective should be to exert our efforts to lessen automobile fatalities and injuries. At present a soldier in the trenches has about an equal chance with a traveler on our highways. Speed is the cause of so many of our motor accidents that it would seem that a concerted effort by the medical profession to have enacted into law a measure that would not allow any automobile, truck or other vehicle that would attain a speed in excess of forty-five miles per hour be used in interstate traffic. Then our accidents would be lessened materially. Substantiating this statement is the following: Speed Factor in Motor Vehicle Accidents, (J. A. M. A., Vol. 108, No. 14. p. 1183; Medical News—Missouri). "A survey was recently made in St. Louis to determine whether speed is a dominant factor in motor vehicle accidents, according to Illinois Health News. A maximum speed limit of thirty miles an hour was set and facilities arranged for strict enforcement for thirty days. During the thirty days there were three deaths caused by motor vehicle accidents against fourteen during the thirty days immediately preceding and an average of thirteen per month during 1935. Compared with the thirty days immediately preceding the experimental period, the motor vehicle accidents of all kinds declined by 17.2 per cent, injuries involved in motor vehicle accidents dropped 22.1 per cent, fatalities 77 per cent, hospital cases 20.2 per cent, skull

fractures 71.4 per cent, and hit and run cases 62 per cent. According to the report, excessive speed is a dominating factor in these accidents and must be controlled to secure safety . . ." The law recently enacted in our State is excellent, but all roads cannot be satisfactorily patrolled. No law yet devised by man has been capable of adjusting a thirty-mile-per hour brain to a fifty-mile-per hour road and a ninety-mile-per hour motor. Georgia should be made a safe place in which to travel and reside. Concerted and persistent effort will effect this.

GEO. A. TRAYLOR, M.D.

PHYSICIANS AND PATIENTS

On becoming ill, one summons a physician who upon arrival examines the patient, makes a diagnosis and prescribes a line of treatment including medication if necessary. To the average person this appears to constitute the entire transaction, whereas, in reality, a rather far-reaching legal contract has been established between the patient and his physician. A better understanding of this relationship will doubtless prove of value to all parties concerned.

Legally, contracts may be either expressed or implied. The relationship established between a physician and a patient is usually in the form of an implied contract, neither party setting out any specific articles of agreement but both being governed by certain contractual obligations created by the Law and founded upon the relationship of the parties. Consideration of the relationships established through these implied contracts will be taken up under two distinct headings: first, that of the physician to the patient, and, second, that of the patient to the physician.

Relation of Physician to Patient

Many persons entertain the erroneous idea that a physician must answer any call for professional services that may be made upon him. While physicians rarely decline to give their services to anyone in need of them, there is no legal or moral obligation upon him to do so; he has a perfect right to decline to answer any call or to treat any case. The patient has no more right to compel a physician to attend him than he has to compel any other person to work at his command. When, however, a physician has answered

the call he has waived the right of refusal and the implied terms of the contract become obligatory both upon him and upon the patient.

How many visits he is to make and the frequency of these visits is a matter resting entirely with the physician for determination, as the law holds him to continue his attendance upon the case so long as his services are required, unless he gives the patient sufficient notice of his intention to discontinue his services so as to permit the engagement of another physician.

The law requires physicians to use ordinary skill and knowledge, to exercise due care and diligence, to follow established lines of practice, and to use their best judgment in any case of doubt while treating any patient. Under these requirements he must not neglect the patient nor experiment upon him by the use of measures which are not upheld by a consensus of opinion among members of the profession. "Ordinary skill and knowledge" is that average skill and ability ordinarily possessed by men of his profession in similar localities and under similar circumstances. Under this ruling a surgeon would be held to possess more than ordinary skill and ability as compared with a general practitioner; a specialist would be held to have more than ordinary skill and ability in his special line of work.

A physician is expected to give all reasonable and necessary instructions—both to the patient and to the nurse or attendants upon the patient—for the proper treatment of the particular disease or injury for which he is at the time attending the patient. In this connection, however, a physician cannot be expected to anticipate and advise against some improbable conduct on the part of the patient.

In the treatment of a contagious or infectious disease the physician's duty not only requires him to treat the patient himself, but to employ all proper and necessary means for protecting other persons against the disease.

No reputable physician will contract to cure any patient or even to benefit him. He will do all that his knowledge, skill and experience leads him to believe will benefit the patient and lead to a cure, but when he has done this he has gone as far as human ability

permits. The law does not, therefore, recognize failure to benefit or cure a patient as a bar to the physician's recovery of fees for his services.

The knowledge secured by a physician during examination and treatment of a patient, or confided to him by the patient, is always considered as confidential. In many states this is legally provided for under what is known as Privileged Communications. Georgia does not recognize legally such a relationship between physician and patient, but the high standard of ethics governing the profession assures the patient that he may rely upon the physician's confidence just as assuredly as though there were a statute providing for this protection.

Relation of Patient to Physician

At the same time that the Law creates a contractual relationship upon the part of a physician, it creates a similar implied contract which is of equal force and just as binding upon the patient.

Legally, the patient is expected to receive the physician into his full confidence as regards any matters pertaining to his physical condition, and to give him complete information. It is also a well established principle of law that it is the duty of the patient to follow strictly all instructions and to conform to all orders of his physician. Failure upon the part of the patient to comply with these requirements will relieve the physician of the obligations imposed upon him by the implied contract.

When the patient himself has summoned a physician he contracts to pay for the services he receives. Should the physician have been called by some other party than the patient himself, the acceptance of the physician's services by the patient creates the same implied obligation upon the part of the patient to compensate the physician for his services. Since the Law imposes upon the physician the duty of determining the number and frequency of visits that he shall make in any given case, the law also makes the implied contract upon the part of the patient an obligation to pay for subsequent as well as for the initial visit. Fees for operations, consultations, special examinations—such as laboratory and x-rays, nurses and assistants,

are also contracted for by the patient, and he is legally responsible for payment.

Under certain conditions other persons beside the physician and patient enter into the implied contract and are legally known as "third parties." The scope of this article will not permit going into detail of these rather complicated relationships. I will only mention that a husband is responsible for expenses incurred in connection with an illness of his wife. A father is responsible for similar services rendered to his minor children. If the father is not living, the guardian (if there be one) or the mother becomes responsible for services rendered the minor child.

J. R. GARNER, M.D.

PUBLIC RELATIONS BUREAU

The House of Delegates of the Association voted unanimously to establish a Public Relations Bureau. Subscription cards have been sent to all members, and to officers of county medical societies. Have you sent in yours? You are urged to give this important matter immediate attention so that the Bureau can begin its work.

WORKMEN'S COMPENSATION AMENDMENT

At a recent meeting of the committee to whom was delegated the responsibility of formulating a schedule of fees to be submitted to the Industrial Relations Board of the State of Georgia, to be used as a guide in adjusting statements for the medical care of patients coming under the Compensation Act, a schedule of fees was adopted and later submitted to the Council of the Association. Council adopted the recommendations of the committee, after minor changes had been made for certain items in the schedule.

The JOURNAL would like to record the scientific work of Georgia doctors. It earnestly requests, therefore, that each physician in the State who publishes a contribution in some other medical periodical submit an abstract of the article for these columns.

The American College of Physicians will meet in New York City, April 4-8, 1938. The Waldorf-Astoria Hotel will be headquarters.

WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, La-Grange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

REPORT OF PRESIDENT WOMAN'S AUXILIARY TO THE MEDICAL ASSOCIATION OF GEORGIA*

MRS. WILLIAM R. DANCY
Savannah

On this our thirteenth annual convention, our thirteenth birthday so to speak, your President wishes to make a brief report of her activities while serving you during the past year, and also, in a general way, to tell you of the progress of our Auxiliary during that period. It is quite evident, however, that a fuller and more detailed account of the work of the individual units of the organization will be rendered you in their reports.

This organization was transferred to me, your President, as an active, interested and progressive auxiliary, which had many worthy accomplishments to its credit. It has been my earnest effort to carry on its endeavors and policies, which have been passed from one administration to another, and to arouse as much interest in these as was possible. Great praise is due to those who have proceeded me in this office, because of their constructive services in building such a splendid auxiliary. And if during the past year, I have added anything to its accomplishments or to its prestige, I shall feel amply rewarded for the time given and the effort expended.

For the success of the past year, your President is deeply indebted to every State officer of our Auxiliary, to the officers of the Districts and County Auxiliaries and to the various chairmen of the Standing Committees. She is happy to have had the pleasure of working with you and she is proud of your results. Appreciation and thanks are also expressed to the officers of the American Medical Auxiliary and Southern Medical Auxiliary, who cheerfully rendered valued aid.

Our Auxiliary is deeply appreciative of the many courtesies extended to us by the Med-

ical Association of Georgia, especially so for the Auxiliary pages in the Medical Journal, and for the printing of our convention programs. The President of the Medical Association of Georgia, Dr. B. H. Minchew, and the Secretary, Dr. Edgar D. Shanks, have been of great assistance to us throughout the year, and to them we wish to express our thanks.

The first official act of this administration was the calling of the Post-Convention Board Meeting. The Corresponding Secretary and Parliamentarian were appointed; also all Standing Committees. Delegates and alternates to the Auxiliary Conventions of the American Medical Auxiliary and of the Southern Medical Auxiliary were selected and the usual annual reports were sent to these organizations. Payment of dues was also authorized. Stationery for the present administration was printed and distributed to all officers.

As you are aware, there is an Advisory Committee of the Medical Association of Georgia to our Auxiliary. This year the committee consisted of Dr. James N. Brawner, Atlanta, Chairman, and Drs. W. A. Selman, Atlanta; W. R. Garner, Gainesville; William R. Dancy, Savannah, and Benjamin Bashiniski, Macon. The chairman of this committee called a meeting of the committee and the Executive Board of the Auxiliary in Atlanta, June 6th, 1936. It was well attended by both the Committee and the members of the Executive Board. At this meeting, your President submitted the objectives of this Auxiliary for the year 1936-1937. These were most cordially endorsed. Several of the committee spoke concerning them, laying the greatest stress, however, on Health Education, Cancer Publicity, and the Student Loan Plan, which the chairman termed one of the greatest progressive steps undertaken by our organization.

The State Board of Health was always willing to lend us a helping hand. To Dr. T. F. Abercrombie, the head of this Board, we are deeply indebted for publishing 4,000 copies of "Care of the Heart" and 4,000 "Requisites for Tuberculosis Control." This

*President's report to the Woman's Auxiliary, Macon, May 13, 1937.

was done without expense to us except for the material used.

The Cancer Commission of Georgia was likewise most generous and kind. Through the courtesy of Dr. J. L. Campbell, its Chairman, 5,000 copies of a newly prepared pamphlet on Cancer were given us for distribution and without cost to our organization.

Shortly after our annual convention in Savannah, May 1936, your President announced "Our Objectives for 1936-1937." These followed the general plan adopted for several years, with, however, a few additional ones. A copy of these objectives and a letter of instructions for the year's work were mailed to every individual member of the Auxiliary, to the officers of the Medical Association of Georgia, to each member of the Advisory Committee, and to the officers of the American Medical Auxiliary and the Southern Medical Auxiliary.

During the year three hundred eighty mimeographed letters were signed and sent out to the membership, one hundred ninety personally written letters including letters to County Presidents and District Managers, five hundred seventy letters in all, forty post cards, three telegrams, one long distance call, and in addition, your President personally compiled a complete directory of the entire Auxiliary membership for the March issue of the Journal of the Medical Association of Georgia.

Your President contributed articles to the Auxiliary pages in the Medical Journal, also to the Auxiliary column in the Atlanta Constitution and one article to the October issue of the American Medical Auxiliary "News Letter."

Your President has this year served as a member of the Executive Board of the Child Health and Welfare Council of Georgia, and as a member of the Executive Board of the American Society for the Control of Cancer.

She attended the meeting of the Advisory Committee and Executive Board in Atlanta, June 6th, 1936; two meetings of the First District Auxiliary, one of the Fifth, one of the Sixth, one of the Ninth, and one of the Tenth; three County Auxiliary meetings, namely Fulton, Ware and the Tri-County, Burke-Jenkins-Screven, and every meeting of our local Auxiliary, totaling sixteen meetings. At each meeting, she gave an address emphasizing the aims of our organization. To district meetings, which she could not attend, written addresses were sent.

In November your President attended the Southern Medical Auxiliary Convention in Baltimore, and as your representative, gave the annual report for Georgia. In April she went to Atlanta to meet the National President, Mrs. Robert E. Fitzgerald, and extended

to her the courtesies expected. She also attended the South Carolina Auxiliary Convention, and carried greetings from our State Auxiliary.

The pronounced progress of the organization this year successfully combats the superstition of the so-called unlucky number thirteen. We believe that thirteen is really the lucky number this year. Your President is the thirteenth president, has served thirteen months in office, is presiding at the thirteenth annual convention, on the thirteenth day of the month.

It is with pleasure that I report the generous celebration of Doctor's Day, March 30th. Most of the county auxiliaries in the State, honored the medical profession on this, the third birthday. This gesture on our part has made an excellent impression and should be continued.

As examples of our activities, I should like to mention that during the year, Health Education programs have been given by county auxiliaries, a number arranged for other organizations and Health Films have been shown. Radio talks have been made by the members of the Auxiliary, including one by your President. Public Relations meetings were held. Subscriptions to Hygeia were increased, and Health pamphlets were widely distributed, including several hundred to the colored branch of the Georgia Parent-Teachers' Congress.

The Student Loan Plan is still our chief objective. Two years ago it was decided that we discontinue making loans to students until we had accumulated the capital sum of one thousand dollars. At present this fund amounts to seven hundred fifteen dollars, and we feel assured that after another year, we can again assume the education of Georgia students in medicine. The Auxiliaries have donated this year two hundred fifty-four dollars and thirty-five cents, balance from last year, three hundred twenty-three dollars and fifteen cents, and the students to whom loans were made, have paid back one hundred thirty seven dollars, fifty cents, which is considered a creditable showing. As you know, nine students have been benefited by this fund. Your President would urge the members to greatly increase their donations to this fund next year, in order that we may carry on this wonderful piece of work.

In laying down the gavel and surrendering my mantle of office at the conclusion of this convention, I shall have the satisfaction of knowing that this year four auxiliaries have been organized and the total membership has increased fifty-four members over last year, making a grand total for this year of four hundred fifteen.

For these superior accomplishments during this year, profound thanks are extended

to all committees, their chairmen, the officers, and all who aided us. Everyone has been so wonderful and so generous in their services. My heartfelt gratefulness and admiration goes out to all of you.

In conclusion I must impress upon you that the Woman's Auxiliary to the Medical Association of Georgia is a most worthy organization, performing a work of great importance. It is loyal to the medical profession and to the lofty principles for which that profession stands. Nothing can take its place. Therefore, you are urged to give it your first and most earnest consideration. It should be:

First in thought

First in the life

Of the loyal, doctor's wife.

For the past year I have given to you and to this organization, the very best that was in me. I have made many devoted friends and have been extended the utmost consideration and hospitality, wherever I have visited. The honors which you have accorded me, as your President, have been more than I justly deserve. If I have done anything for the organization to promote its welfare or to perform my duties sufficiently well to merit your approval, I shall be happy in the thought that my efforts were not in vain.

MEMBERS OF THE ASSOCIATION REGISTERED AT THE EIGHTY- EIGHTH ANNUAL SESSION

of the

AMERICAN MEDICAL ASSOCIATION
ATLANTIC CITY, N. J., JUNE 8-11, 1937

Allen, Edwin W., Milledgeville
Askew, Hulett H., Atlanta
Aven, C. C., Atlanta
Baird, J. Mason, Atlanta
Blackford, L. Minor, Atlanta
Boland, Frank K., Atlanta
Boyd, B. H., Jr., Atlanta
Boyette, L. S., Ellaville
Brawner, Albert F., Smyrna
Brawner, Jas. N., Atlanta
Broderick, J. Reid, Savannah
Bunce, Allen H., Atlanta
Camp, R. T., Fairburn
Clay, Grady, Atlanta
Colvin, E. D., Atlanta
Compton, H. T., Atlanta
Crawford, Herschel C., Atlanta
Curtis, Walker L., College Park
Deloach, A. W., Waycross
Erickson, Mary J., Thomasville
Eubanks, Geo. F., Atlanta
Fancher, J. K., Atlanta
Fitts, Jno. B., Atlanta
Franklin, R. C., Swainsboro
Funderburk, N. A., Trion

Garner, J. E., Thomaston
Garner, W. R., Gainesville
Giddings, Glenville, Atlanta
Greenblatt, Robert B., Augusta
Hailey, Wm. Howard, Atlanta
Hallum, Alton V., Atlanta
Harbin, W. P., Rome
Harrell, H. P., Augusta
Hodgson, Fred G., Atlanta
Holmes, Champ, Atlanta
Howell, Stacy C., Atlanta
Jones, A. B., Jr., Quitman
Kelly, G. Lombard, Augusta
Klugh, Geo. F., Atlanta
Kracke, Roy R., Emory University
Lake, Wm. F., Atlanta
Lancaster, E. M., Shady Dale
Lang, G. H., Savannah
Leadingham, Roy S., Atlanta
Lee, F. Lansing, Augusta
Lowance, Mason I., Atlanta
Mattingly, Thos. W., Fort McPherson
McCord, James R., Atlanta
McDougall, Jas. C., Atlanta
Minor, Henry W., Atlanta
Mitchell, L. C., Brunswick
Mitchell, Wm. E., Atlanta
Morrison, Howard J., Savannah
Myers, Wm. H., Savannah
Norris, Jack C., Atlanta
Park, Emory R., LaGrange
Parker, Francis P., Emory University
Paullin, Jas. E., Atlanta
Phillips, W. P., LaGrange
Pittman, Jas. L., Atlanta
Pruitt, Marion C., Atlanta
Roberts, Chas. W., Atlanta
Sanchez, S. E., Barwick
Saunders, Albert F., Valdosta
Shanks, Edgar D., Atlanta
Sloan, W. P., Atlanta
Smith, Carter, Atlanta
Sydenstricker, V. P., Augusta
Torpin, Richard, Augusta
Weaver, Olin H., Macon
Williams, C. O., West Point
Woodbury, Robert A., Augusta
Yampolsky, Jos., Atlanta

CANNED FOODS

A second book containing scientific facts on commercially canned foods has recently been published by the American Can Company, compiled by the Nutrition Laboratory in the Research Department of the Company. The book, *Nutritive Aspects of Canned Foods*, has been prepared for doctors and scientific workers with canned foods. The earlier book, *Facts About Commercially Canned Foods*, was published last year.

The book is a general summary of facts about tin containers and canned foods. It is divided into two sections. The first deals with the preservation of foods, dietary requirements, the mineral and vitamin conservation in canned foods and infant nutrition.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

THE ECONOMICS OF SANITATION

No business can be prosperous without a healthful environment. There is no industry without serious economic loss where a healthful environment is lacking. What profit if a man is employed to work twelve months and through physical impairment he only works eleven? Then again where is profit when a man works twelve months but through physical unfitness he is only 50 per cent efficient? Lost labor due to sickness is the greatest economic factor in industry today. Each individual in an industrial establishment is an integral part of a great profit making machine. When the health of one individual is impaired this great machine is losing efficiency. Yet many industrial executives often employ an expert machinist to specialize in finding mechanical defects in machines and for protection against injury. Why then should not such care be taken of human mechanism? This care can be simply provided by a healthful environment. Such an environment is sanitation, for sanitation is the basis of a healthy body, physically fit to properly perform at our regular daily routine.

In this enlightened age it is recognized by governmental and industrial executives that sanitation must be provided before man power is assembled to accomplish any great project.

An outstanding illustration of this is the great project of the Panama Canal which cost nearly four hundred million dollars. This project was twice undertaken by the French Government and twice failed because sanitation was not first provided. The French undertook this task in 1881 and after a period of six years and an expenditure of two hundred million dollars, with only a small part of the work completed, the project was abandoned. Thousands of lives were lost due to lack of preliminary sanitation and from such diseases as malaria and yellow fever. Typhoid fever also took its toll due to impure water. In other words, in a period of six years certain diseases, preventable by simple sanitation, cost in addition to thousands of human lives the enormous sum of over two hundred million dollars. It has been estimated that 25 per cent of the total number employed in the six year period died from yellow fever alone. Consequently, after a period of six years the canal company was declared bankrupt, the cause of which was due to lack of sanitation. A new canal company was formed a few years

later and operated until 1893 when operations were again suspended due to the same cause.

Meanwhile the United States Government became interested in the project, secured a strip of land from the Republic of Panama, now known as the Canal Zone, and started construction of the canal in 1906, and it was completed in 1915. The United States Government realized that before successful work could be accomplished disease must be removed by sanitation. This involved purification of drinking water and eradication of mosquitoes. The United States Government took immediate steps to improve sanitary conditions generally throughout the Canal Zone. Water supplies were improved. Human waste was properly disposed of and disease-bearing mosquitoes were exterminated. So vigorously was the work of sanitation prosecuted that within two or three years the Canal Zone was transformed from one of the most pestilential regions to a region of normal healthfulness and today it is considered a desirable winter resort. It does not take a statistician to understand the commercial value of sanitation as an investment in this instance. Today the Panama Canal stands as a monument to civil and sanitary engineering. To those pioneers who from 1906 to 1915 blazed the trail for public health through sanitation we owe a debt of gratitude. Large business enterprises today owe financial success to present day sanitation patterned from this pioneer work.

Many instances could be cited where nations have fallen, armies have been defeated and commercial supremacy has been lost due to insanitary environment jeopardizing the health of the people. The recent progress of sanitation has become so rapid that the subject of preventive medicine has become a specialty and built upon the fundamental principle of disease prevention through sanitation. In relation to the science of modern economics sanitation has become a cornerstone for comfort and prosperity. Today no great enterprise is considered without sanitation as the first principle. In peace and in war it is fundamental.

Not many years have passed since the flower of our manhood was called to make the "world safe for democracy." America was unprepared for war. The first thing necessary was to raise an army large enough to win the greatest war in history. The names of about ten million men were listed for service. Many of these were unfit because

of physical defects due to results of insanitary environments. For those accepted it was necessary to build cantonments in all parts of the country. These men had to be kept physically fit. Selections of sanitary locations and sanitary maintenance of army cantonments became the paramount problem. Plants for purification of drinking water, plants for disposal of sewage and provision for mosquito eradication by drainage were necessary. Money was not spared in providing these sanitary facilities for proper maintenance of the most efficient army in the world. Money could not have been more advantageously expended. The result was an army of millions of men with so little typhoid fever, malaria and other preventable diseases that sickness was practically negligible. This was the army that eventually made the world safe for democracy. This is only another illustration of sanitation as a good financial investment.

Public health obtained through modern sanitation has ceased to be a matter of guesswork. It has attained a scientific standing based on years of research. Health is the greatest of assets and it cannot be measured in monetary terms, nor can it be purchased by an individual once it is lost. It pays handsomer dividends than stocks and bonds. Its value never fluctuates but is constant. An investment in health is not speculative but a security of profits. We cannot compromise where health is concerned, there is only one course. That course is action. We can no more maintain health without sanitation than we can expect an airplane to mount the skies without gasoline, or a locomotive to attain the grade without steam. Sanitation is a force, not a sentiment; a course of action, not a creed. There has been no time within the memory of the present generation when the need for sanitation has been so great. When the human body is debilitated by famine, when mentality and moral courage are depreciated by sorrow and poverty, the adversaries of public health find least resistance, and the physical body relinquishes its right to survive. Now is the time, especially for the town resident, to take stock of his environment. For these may lurk within the slovenly slums of his own city and within close proximity to his premises, augmented by recent poverty, ignored by civic indifference, hidden by official evasion those filth-borne diseases due entirely to an insanitary environment. For there may lurk within the truth, civic pride often extends no further than the paved streets, the city park is a subterfuge, and the statue of the historic and courageous statesman on the town square only a delusion. For where there are no sewers and only earthen excavations for drinking water, filth-borne diseases inevita-

bly lurk in formidable guile. Typhoid fever which annually takes its enormous toll in Georgia originates under such environment. Dysentery and other filth-borne diseases which attack our infants are largely due to such conditions in our towns almost under our eyes.

Mr. Citizen, it is suggested that you investigate, and if this is correct, stimulate the interest of others and see that your mayor and council take cognizance of this and request a sanitary engineering survey by your State Department of Public Health so that such conditions may be remedied.

L. M. CLARKSON, *Chief Division of Sanitary Engineering, Georgia Department of Public Health.*

NEWS ITEMS

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on May 26th. Dr. C. L. Davis, Alma, read a paper entitled *The Diagnosis of Appendicitis*; Dr. Sage Harper, Ambrose, *The Relief of Menopausal Symptoms*. Scientific papers were read at the June meeting by Dr. I. W. Moorman and Dr. B. O. Quillian, both of Douglas.

THE NEXT STAFF MEETING of Grady Hospital, Atlanta, will be held on August 10th.

THE WARE COUNTY MEDICAL SOCIETY met at the Y. M. C. A. Building, Waycross, on June 2nd. Dr. H. A. Seaman, Waycross, read a paper on *Malignancy of the Cervix Uteri*.

DR. CLARENCE PALMER, associated with the Georgia Warm Springs Foundation for a number of months, has returned to Covington and resumed practice there.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on June 3rd.

THE STAFF MEETING OF EMORY UNIVERSITY HOSPITAL, Emory University, was held on June 7th. Subjects of case reports were: *Presentation of Specimens*, by Dr. P. E. Lineback; *Cranial Injury*, Dr. Edgar F. Fincher, Jr.; discussed by Dr. Glenville Giddings; *Insulin Therapy of Schizophrenia*, Dr. E. Van Buren; discussed by Dr. W. W. Young.

DR. W. F. REAVIS, Waycross, was elected vice-president of the Atlantic Coast Line Railroad Association at a recent meeting held in Savannah. Dr. Craig Barrow, Savannah, Chief Surgeon of the Central of Georgia Railroad, extended greetings. Dr. T. S. Clay, Savannah, was chairman of the nominating committee. Dr. W. S. Goldsmith, Atlanta, was one of the principal speakers.

THE LAST MEETING OF THE OCMULGEE MEDICAL SOCIETY, composed of Bleckley, Dodge, and Pulaski counties, was held at the Lee-Land Hotel, Eastman. Dr. J. M. Smith, Cochran, read a paper entitled *Congestive Heart Failure*; Dr. J. Cox Wall, Eastman, *The Pneumonia Heart*; Dr. H. T. Harper, Eastman, *The Electrocardiograph in the Diagnosis of*

Heart Diseases. The next meeting of the society will be held on July 16th.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on June 8th. Dr. S. Ross Brown, State Department of Public Health, read a paper entitled, *Diagnosis and Treatment of Venereal Diseases*; Dr. M. J. Egan reported a case, *Unusual Features of Fencing Foil in the Brain—Presented Case.*

BRAWNER'S SANITARIUM, Smyrna, announces the reopening of offices at 410 Doctors' Building, 478 Peachtree Street, N. E., Atlanta, under the direction and in charge of Dr. Albert F. Brawner. Dr. Jas. N. Brawner will maintain his offices at the Sanitarium in Smyrna.

DR. ALBERT W. LEWIS, JR., announces the opening of offices at 799½ Cascade Avenue, S. W., Atlanta.

DR. W. A. SELMAN, Atlanta, was elected president of the Emory Medical Alumni Association for 1937-38 on May 12; Dr. Marion C. Pruitt, Atlanta, re-elected secretary-treasurer.

DR. J. L. CAMPBELL, Atlanta, was re-elected director of the Atlanta Cancer Clinic on June 3rd. He has served as director of the Clinic since its organization three years ago. In his annual report he stated that 729 cases had been treated, 517 were diagnosed as malignant. Of the malignant cases 352 were given radium treatment and the others treated by x-ray or surgery.

DR. LEE BIVINGS announces the removal of his offices to 20 Fourth Street, N. W., Atlanta.

THE FULTON COUNTY MEDICAL SOCIETY met at the Academy of Medicine, 38 Prescott Street, N. E., Atlanta, on June 17th. The scientific program consisted of a symposium on syphilis as follows: *Laboratory Diagnosis of Early and Late Syphilis*, by Dr. Jack C. Norris; *Skin Manifestations of Syphilis*, Dr. Howard Hailey; *The Psychiatric Aspect of Syphilis*, Dr. Roger C. Swint; *The Treatment of Syphilis*, Dr. S. Ross Brown.

THE INSTITUTE OF PUBLIC AFFAIRS of the University of Georgia, Athens, held its round table conferences on June 22, 23, 24. Dr. Frank K. Boland, Atlanta, presided at the program on venereal diseases. Dr. Robert Greenblatt, Augusta, read a paper entitled, *Newer Phases of the Newer Disease Problem*; Dr. S. Ross Brown, Atlanta, *Progress in the Control of the Venereal Diseases*; discussed by Dr. J. W. Brittingham and E. S. Sanderson, Augusta, and Dr. M. A. Hubert, Athens. Dr. J. A. Redfearn, Albany, presided at the conference on malaria. Mr. M. L. Clarkson, Atlanta, read a paper, *Malaria a Public Health Problem in Georgia*; Dr. T. H. D. Griffiths, Savannah, *Malaria as an Industrial Problem*; discussed by Dr. H. M. Tolleson, Eastman, and Dr. Eugene E. Murphey, Augusta. Dr. W. W. Brown, Atlanta, presided at the conferences on public health. Dr. Chas. O. Rainey, Camilla, read a paper, *Why Georgians Live Longer*; Dr. Guy G. Lunsford, Atlanta, *Social Security and Public Health*; Dr. T. F. Abercrombie, Atlanta, *Public*

Health and Future Generations; discussed by Dr. J. D. Applewhite, Macon. Dr. G. Lombard Kelly, Augusta, presided at the conference on public health. Dr. T. F. Abercrombie spoke on *An Enlarged Public Health Program*. Dr. Weyman Davis, Athens, presided at the conference on child hygiene. Dr. Philip Mulherin, Augusta, read a paper on *Anorexia as a Problem of Behavior*; Dr. J. K. Fancher, Atlanta, *Endocrine Disturbances*; discussed by Dr. H. I. Reynolds and Dr. J. A. Simpson, Athens. Dr. Grady N. Coker, Canton, presided at the conference on nutrition.

THE THIRD DISTRICT MEDICAL SOCIETY met at Perry on June 9th. The program consisted of an address by Dr. Geo. A. T aylor, Augusta, president; titles of papers: *The Cardiac Arrhythmias*, Dr. H. T. Harper, Eastman; discussed by Dr. W. Edward Storey, Columbus, and Dr. Steve P. Kenyon, Dawson; *Some Errors of Omission and Commission in the Practice of General Surgery*, Dr. Geo. Y. Massenburg, Macon; discussed by Dr. Chas. E. McArthur, Cordele, and Dr. Thomas M. Adams, Montezuma; *Vitamins*, Dr. Guy J. Dillard, Columbus; discussed by Dr. J. D. Owens, Rochelle, and Dr. Loren Gary, Jr., Shellman; *Diagnosis and Treatment of Gallbladder Disease*, Dr. Chas. H. Richardson, Macon; discussed by Dr. Warren A. Coleman, Eastman, and Dr. Herschel A. Smith, Americus; *The Acute Abdomen*, Dr. Wm. L. Cooke, Columbus; discussed by Dr. J. C. Patterson, Cuthbert, and Dr. R. M. Ware, Fitzgerald; *Tuberculosis in Children*, Dr. Wm. C. Cook, Columbus; discussed by Dr. L. E. Abram, Fitzgerald, and Dr. Fred Adams, Montezuma.

THE MUSCOGEE COUNTY MEDICAL SOCIETY met at the Ralston Hotel, Columbus, June 10th. Dr. Edgar F. Fincher, Jr., Atlanta, read a paper entitled *Symptoms and Diagnosis of Brain Tumors*; Dr. Wm. G. Hamm, Atlanta, *Cosmetic Achievements of Plastic Surgery*.

DR. CHAMP H. HOLMES, Atlanta, was recently elected president of the American College of Chest Physicians at its annual meeting in Atlantic City, N. J.

THE BULLOCH-CANDLER-EVANS COUNTIES MEDICAL SOCIETY held its June meeting at the Clubhouse in Metter.

THE AMERICAN HEART ASSOCIATION held its thirteenth scientific meeting in Atlantic City, N. J., June 7-8. Dr. L. Minor Blackford, Atlanta, read a paper entitled *Syphilitic Aortic Insufficiency*. Dr. Blackford and Dr. Carter Smith were authors of the article.

DR. ROY R. KRACKE, Emory University, was elected chairman of the Section on Pathology and Physiology of the American Medical Association at its annual session held in Atlantic City, N. J., June 7-11. He was also elected a member of the American Board of Pathology for a six year term.

DR. AND MRS. FRED H. SIMONTON, Chickamauga, entertained members of the Walker County Medical Society and Auxiliary in their home on June 7th. Dr.

O. L. Von Canon, Chattanooga, Tenn., was the guest speaker and spoke on pediatrics.

DR. V. P. SYDENSTRICKER, Professor of Medicine, University of Georgia School of Medicine, Augusta, announces the opening of a pellagra clinic at the University Hospital on June 21st. The clinic will be open on Mondays, Wednesdays and Thursdays for the treatment of pellagra patients for a period of five weeks.

DR. G. A. DUNCAN, Decatur, is in New York City taking post-graduate study in pediatrics and obstetrics

THE CARROLL COUNTY MEDICAL SOCIETY met at the Clifton Hotel, Carrollton, on June 15th. Dr. Stewart R. Roberts, Atlanta, was the principal speaker.

DR. MURDOCK EQUEN, Atlanta, was recently elected Vice-President and Chairman of the Southern Section of the American Laryngological, Rhinological and Otolological Society. The Southern Section will meet in Atlanta in January, 1938. Dr. Sam Kopetzky, New York City, who was decorated by the French government for his work in mastoid surgery, will be one of the principal speakers.

THE SIXTH DISTRICT MEDICAL SOCIETY held its summer meeting at Milledgeville on June 30th. Titles of papers on the scientific program were: *The Emergency Treatment of Burns*, by Dr. N. J. Newsom, Sandersville; *Hypoglycemic Treatment of Schizophrenic Psychoses*, Dr. H. D. Allen, Jr., Milledgeville; *The Mounting Death Rate from Heart Diseases*, Dr. S. T. R. Revell, Louisville; *Gradenigo's Syndrome Complex-Case Report*, Dr. J. Allen Smith, Jr., Macon; *Practical Application of Human Blood Typing*, Dr. E. B. Saye, Macon; *Consideration of Birth Trauma with Special Reference to Intracranial Hemorrhage*, Dr. Alvin E. Siegel, Macon; *Early Diagnosis and Adequate Treatment of Early Syphilis*, Dr. S. Ross Brown, Atlanta. Addresses by Dr. Geo. A. Traylor, Augusta, and Dr. Edgar D. Shanks, Atlanta, president and secretary-treasurer of the Association, respectively. Dr. Jno. W. Oden, Superintendent of the Milledgeville State Hospital, entertained the members at lunch.

IF INTERESTED in a good location for a physician where one of our members died, write the secretary-treasurer. Good paying practice established.

Dr. O. N. Harden, Cornelia, was honored by his family on June 16th, his 70th birthday. He has practiced for more than forty years, began in Atlanta where he was born, then practiced in Banks county for a number of years, then moved to Cornelia where he is now practicing.

The Randolph County Medical Society met at the Patterson Hospital, Cuthbert, on July 1st.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on June 30th. Dr. I. W. Moorman, Douglas, read a paper entitled *Hematuria as a Complication of Pregnancy*; Dr. B. O. Quillian, Douglas, *Psychiatry in General Practice*. Dr. T. H. Johnston and Dr. J. W. Wallace, both of Douglas, will read papers at the July meeting.

If interested in a location to practice, write the Secretary-Treasurer of the Association.

OBITUARY

Dr. Lewis McFarland Gaines, Atlanta; member; Johns Hopkins University School of Medicine, Baltimore, Maryland, 1903; aged 59; died of heart disease at a private hospital in Atlanta on May 24, 1937. He was a native of Staunton, Virginia, and the son of Dr. Frank H. Gaines, founder and first president of Agnes Scott College at Decatur. He received his literary education at Hampton-Sydney College in Virginia and post-graduate course at the University of Virginia. From 1904 through 1907, he was Professor of Anatomy and Physiology at Wake Forest College School of Medicine, Wake Forest, North Carolina; 1911-1912 was Professor of Neurology at the Atlanta School of Medicine; 1913-1926 was Professor of Nervous and Mental Diseases at Emory University School of Medicine; and for many years was on the staffs of the Georgia Baptist Hospital and Wesley Memorial Hospital, Atlanta. Dr. Gaines was one of the State's best citizens, an active member of the Fulton County Medical Society, Southern Medical Association, American Medical Association and the Central Presbyterian Church. His associates recognized his ability and good judgment in all his undertakings. Dr. Gaines was chairman of the Committee on Medical Economics of the Medical Association at the time of his death and had done a lot of valuable work in that capacity. Surviving him are his widow; his mother, Mrs. Frank H. Gaines, Decatur; two daughters, Mrs. Clifton B. Wilburn of Brooklyn, N. Y., and Miss Virginia Gaines, Atlanta; one son, Alexander B. Gaines, Atlanta. Funeral services were conducted from Spring Hill Chapel by Dr. Stuart R. Oglesby. Burial was in West View Cemetery. Officers of the Fulton County Medical Society and the Central Presbyterian Church served as an honorary escort.

Dr. Walter Edgar Barber, Atlanta; member; Atlanta College of Physicians and Surgeons, Atlanta, 1913; aged 52; died of heart disease at a private hospital in Atlanta on May 24, 1937. He was a native of Hawkinsville. Dr. Barber was a prominent physician until he retired from practice; was on the staffs of Crawford W. Long Memorial Hospital, Emory University Hospital, Georgia Baptist Hospital and Grady Hospital. He was a member and past-president of the Fulton County Medical Society, Southern Medical Association, American Medical Association, member and steward of the Druid Hills Methodist Church. Dr. Barber was intensely interested in the civic and religious activities of Atlanta. Surviving him are his widow; one daughter, Miss Rose Barber; one son, W. E. Barber; one sister and three brothers. Funeral services were conducted from Spring Hill Chapel by Dr. John B. Peters and Dr. John L. Yost. Members of the Fulton County Medical Society served as pallbearers. Burial was in West View Cemetery.

Dr. Cicero Gibson, Thomson; member; Emory University School of Medicine, Emory University, 1889; aged 71; died at his home on May 30, 1937. He was a native of Warren county. Dr. Gibson was

one of the oldest physicians in McDuffie county. He was held in high esteem by hundreds of friends and one of the State's most respected citizens. Through his practice of medicine and business career, Dr. Gibson contributed heavily to the comfort and welfare of the people of his community. He was a member of the Richmond County Medical Society. Surviving him are his widow, two daughters, Mrs. H. L. Vickers, Hattiesburg, Mississippi, and Mrs. Sam H. Matthews, Fort Valley; one son, Dr. Frank N. Gibson, Thomson. Burial was in the city cemetery.

Dr. O. W. Statham, Leesburg; member; Baltimore Medical College, Baltimore, Maryland, 1895; aged 76; died at a hospital in Albany on May 19, 1937. He was reared in Stewart county. Dr. Statham began the practice of medicine at Smithville more than forty years ago, three years later moved to Leesburg where he practiced until his death. He was one of the most highly esteemed physicians in Lee county and contributed liberally of his time and funds to the up-building of his community. Dr. Statham was a member of the Dougherty County Medical Society and the Baptist Church. Surviving him is one son, Dr. J. C. Statham, Milledgeville. Funeral services were conducted from the Callaway Memorial Baptist Church. Interment was in the village cemetery.

Dr. Wilbur Fisk Culpepper, Senoia; New York University Medical College, New York City, 1884; aged 80; died on May 17, 1937. He practiced medicine in Coweta and adjoining counties for more than fifty years and was one of the most widely known physicians in that section of the State. Dr. Culpepper was a devoted Christian and a member of the Senoia Methodist Church. Surviving him are his widow, two daughters, Miss Mary Culpepper, Senoia, and Mrs. W. C. Turpin, Jr., Macon. Funeral services were conducted from the Senoia Methodist Church by Rev. N. O. L. Powell and Rev. J. E. Hannah. Burial was in the Senoia city cemetery.

Dr. James T. Elder, Farmington; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; aged 76; died on June 7, 1937, after a long illness. He was a prominent physician and did an extensive practice in Oconee and adjoining counties for more than forty years. Dr. Elder was charitable and public spirited. Surviving him are his widow, two daughters, Mrs. R. L. Bishop and Miss Lois Elder, both of Farmington; one son, H. O. Elder, Farmington. Funeral services were conducted from the Christian Church by Rev. Richard Greer. Burial was in Antioch cemetery.

Dr. William Henry Steele, Griffin; member; Atlanta College of Physicians and Surgeons, Atlanta, 1900; aged 67; died after a long illness at his home on June 17, 1937. He had practiced medicine in Butts and Spalding counties for more than thirty-five years. Dr. Steele was a successful practitioner and was held in high esteem by hundreds of acquaintances. He had been a faithful and loyal member of the Medical Association of Georgia for more than a quarter of a cen-

tury, was a member of the Masonic Lodge and Presbyterian Church. Surviving him are his widow, two daughters, Mrs. L. Raymond Rose, Great Neck, Long Island; Miss Jane Steele, Griffin; three sons, T. E. Steele, Murfreesboro, Tenn.; William Steele, Griffin, and Frank Steele, Newport News, Va. Funeral services were conducted by Rev. Fulton C. Lytle, Rev. M. M. Maxwell and Rev. C. B. Bullard. Burial was in Providence cemetery in Butts county.

Dr. John Wyatt McClain, Pelham; University of Georgia School of Medicine, Augusta, 1889; aged 69; died at his home of heart disease on June 10, 1937. He was a native of Early county. Dr. McClain had practiced medicine in Mitchell and adjoining counties for more than thirty-five years. He was held in high esteem by hundreds of acquaintances. Surviving him are seven children: Dudley McClain, Frank McClain, Miss Carolyn McClain and Miss Elizabeth McClain, all of Pelham; Charley McClain, Miss Grace McClain and Miss Charner McClain, all of Atlanta. Funeral services were conducted from the residence by Dr. J. A. Thomas. Burial was in the Pelham cemetery.

Dr. William James Shaw, Rome; member; Emory University School of Medicine, Emory University, 1895; aged 69; died at his home on June 21, 1937. After graduating in medicine, he began as an intern under Dr. Robert Battey at Rome and spent the remainder of his life there. Recognition of his ability as a physician was shown by the many offices he filled, among them were: member of the staff of Harbin Hospital, chairman of the Floyd County Board of Health, surgeon for the Southern Railway Company, served during the World War as captain and in charge of Camp Hancock Hospital, served a number of years as city physician of Rome. Surviving him are his widow, two daughters, Mrs. Richard Marshall, Tuscaloosa, Ala., and Miss Patricia Shaw, Rome; one son, William Norris Shaw, Rome. Rev. John W. Melton conducted the funeral services from the First Presbyterian Church. Burial was in Sardis cemetery.

GEORGIA TUBERCULOSIS HOSPITAL AUTHORIZED BY ASSEMBLY IN 1908

RESULTANT STORY ONE OF GROWING SERVICE IN CAUSE OF ALL HUMANITY

(This is the second, and concluding, installment of a fascinating story on the Georgia State Department of Health, its history and achievements. The opening installment was published here last Sunday.)

An act of the general assembly authorizing the establishment of a sanatorium for the treatment of tuberculosis was approved by Governor Hoke Smith on August 17, 1908. This act carried with it an appropriation of \$25,000, and provided that the sanatorium should be under the management of a board of trustees appointed by the Governor.

During the summer of 1909, the late Captain W. G. Raoul and T. D. Tinsley selected a site for the sanatorium on the Southern Railroad in Banks county 72 miles northwest of Atlanta and six miles southwest of Cornelia. The property selected consisted of 257 acres with an altitude of 1,600 feet. At that time, the greater part of this land was in original forest of pine, oak, hickory and poplar.

In August, 1910, \$30,000 was appropriated for completion of buildings. In November of the same year, Dr. Edson W. Glidden was appointed superintendent, but the buildings were not completed and equipped until April, 1911. At that time, the buildings consisted of an infirmary building, three 10-bed cottages, a small house for colored help, and a barn.

In August, 1912, \$10,000 was appropriated for the construction of a sewage disposal plant, and three new cottages.

Purposes of Construction

The infirmary was constructed for the purpose of caring for cases suffering from acute conditions occurring in tuberculosis. It was modified, however, so that one wing could be used for dining room and kitchen, and the basement for laundry, heating plant and storage room. The central portion was used for administrative purposes and staff quarters. The cottages consisted of large open-air sleeping porches accommodating 10 patients each, with dressing rooms in the rear containing individual lockers, bath and toilet. The barn was situated about 500 yards from the infirmary. The water supply was collected from springs which were covered and protected from drainage water. It was piped to a reservoir, pumped to a tank on a hill near the barn, and supplied all the buildings. In the valley below the buildings, a sewage disposal plant was located capable of caring for 400 to 500 people.

In the beginning, the main object of the institution was to improve the patient's condition and arrest the disease. At the same time, it was the purpose of the institution to serve as an educational center. Patients were taught that tuberculosis is an infectious disease and that certain precautions must be taken to prevent infection of others.

Trustees Abolished

In 1918, the general assembly passed an act abolishing the board of trustees and naming the State Board of Health as the board for the management of the State Tuberculosis Sanatorium. On September 1, the institution was transferred from the control of the board of trustees to the State Board of Health. At that time there were 39 patients in the institution. There were around 100 beds available. However, during the next few years, all beds were filled.

In 1919, in order to enlarge sanatorium facilities, additional property comprising about 400 acres was purchased in Habersham county adjoining the property in Banks county.

In 1923, the general assembly passed an act placing a 10 per cent tax on cigars and cigarets, making the first \$500,000 available for the construction of a new tuberculosis sanatorium.

New Building

In 1925, contract was awarded for the new building of 150-bed capacity. A four story building of fire-proof construction was completed, and opened on March 10, 1927. The old building was made available to colored patients and was opened March 12, 1928, placing 100 beds at their disposal. During that year, 86 colored patients were treated.

Dr. Joe P. Bowdoin, deputy commissioner of health, and grand master of the Georgia Masons, in 1922, conceived the idea of the Masons building a cottage for children with tuberculosis. At that time, there was no place in the state where children could be received and given adequate treatment. Money for this purpose was subscribed by Masons throughout the state. Liberal contributions were made by the Order of the Eastern Star. Complete furnishings were contributed by the Grand Chapter of Royal Arch Masons. The cornerstone for the children's building was laid on May 4, 1929. The building was completed and turned over to the state with impressive dedication services on April 3, 1930. Governor L. G. Hardman accepted the building on the part of the state, and turned it over to the State Board of Health, making this board responsible for its care and maintenance. This magnificent building has a bed capacity of 85 children, and is one of the most modern in the United States at this time.

School Erected

The State Department of Education realized that a great many children would be in this institution for considerable length of time without educational advantages. State School Superintendent M. L. Duggan, therefore, authorized the raising of funds by the school children of Georgia to erect a school building at Alto. Small contributions from a penny to a dime were made. On account of an influenza epidemic which interfered with the campaign, the funds subscribed were not large enough to complete the building. Dr. and Mrs. John A. Rhodes, of Crawfordville, made possible the completion of the school building dedicated on April 24, 1931, by a generous donation of \$1,000.

In 1929, a modern water plant with a daily capacity of 250 gallons was constructed to care for the complete institution. The water is pumped from a spring-fed lake; it is aerated, treated with lime and alum, and allowed to stand in coagulation basins long enough for the sediment to flocculate. Then, it is filtered and chlorinated, after being tested as to its purity, and is passed to the storage tank from which it is drawn directly for use as needed.

7,816 Patients

Since the creation of the institution in 1908, there have been 7,816 individuals treated within its walls—6,927 white adults, 460 white children, 336 colored adults, and 93 colored children. A careful study reveals the fact that a stay at the institution adds an average of five years to the life of every patient. This means that the institution has added 39,080 years of life to the citizens of Georgia. With the enlarged facilities for taking care of children, a conservative estimate is that an average of 15 years will be added to the lives of those that pass through the institution.

The tuberculosis campaign in Georgia has resulted in the death rate for this disease being lowered from 81.5 per 100,000 population in 1920 to 74.6 in 1930—the lowest of any southern state with the exception of Florida.

A Training School

At the 1918 session of the general assembly, Governor Hugh M. Dorsey appointed a committee composed of W. E. Thomas, W. B. Baker, W. F. Cruselle, J. S. Shingler, Miss Rhoda Kaufman, Dr. M. L. Brittain and Dr. T. F. Abercrombie to investigate and make recommendations to relieve the situation among the uncared for feeble-minded. This committee requested the National Committee on Mental Hygiene to furnish a scientific advisor to conduct a survey of the state. Dr. V. A. Anderson was selected. His report showed that 40 per cent of the inmates of alms houses were feeble-minded, and that feeble-minded families were found in the state that had been supported by church and organized charities for four or five generations. A study of one orphanage showed that 28.7 per cent of the children were feeble-minded. Seventeen and five-tenths per cent of the male inmates of the state prison farm were feeble-minded, 42.8 per cent of the women inmates of the prison farm were found to be feeble-minded. In two typical county jails, 34 per cent of the inmates were found to be feeble-minded with a mental level of 10 years or under. Of 122 immoral women examined, 43.5 per cent were found to be feeble-minded. Of 100 cases of juvenile delinquents studied in the juvenile court, 17 per cent were found to be feeble-minded. Three and five-tenths per cent of the children in the public schools were found to be feeble-minded.

Gracewood Orphanage

The legislature responded to the report of the committee by appropriating \$100,000. The following committee was appointed to investigate the question of suitable location for the institution: Governor Hugh M. Dorsey, Attorney General Clifford Walker and Dr. T. F. Abercrombie. This committee purchased the Tuttle-Newton Orphans' home at Gracewood, eight miles from Augusta. On this property was located six concrete buildings constructed on the cottage plan with a concrete dairy barn and other outhouses, and approximately 325 acres of land. The purchase price was \$100,000. Augusta and Richmond county gave \$25,000 for the maintenance the first year.

Dr. George H. Preston was the first superintendent. The first child was received on July 4, 1921. Doctor Preston remained as superintendent until January 15, 1925. In February, 1925, Dr. R. W. Todd of the health department of Richmond county, was made medical director and in September was elected superintendent. Doctor Todd remained at the institution until April 1, 1926. He was succeeded by Dr. John W. Oden, who came to the institution April 5, 1926.

Until four years ago, the population of the institution had never been higher than 64, with a per capita cost ranging from \$1.40 to \$1.25 per diem per child. The legislature of 1925 increased the annual appropriation from \$25,000 to \$35,000. Repairs were made on all buildings, new sewerage, hot and cold

water, and steam heat have been added to every building in which children are housed. The population has increased until at the end of the year 1931, there were 326 children in the institution.

In 1927, the appropriation was increased to \$60,000. In 1929, the appropriation for maintenance was increased to \$75,000 and \$75,000 additional was appropriated for building purposes or the purchase of property. In December, 1929, Circular Court, one of the most fertile farms in Georgia, consisting of 456 acres, was purchased.

—Atlanta Constitution, Atlanta, May 23, 1937.

CHATTAHOOCHEE VALLEY MEDICAL ASSOCIATION, ALBANY MEETING, JULY 13-14, 1937

The thirty-seventh annual meeting of the Chattahoochee Valley Medical Association will be held at Radium Springs, Albany, Ga., July 13th-14th. The organization will have Dr. Deryl Hart, Durham, N. C., Professor of Surgery at Duke University, as guest speaker. Dr. Hart is a native of Talbotton, Ga., and received his premedical education at Emory University. The subject of his address will be: "Sterilization of the Air in the Operating Room with Bactericidal Radiant Energy; Report of over 500 Cases."

The meeting will be attended by more than 200 members of the medical profession from Alabama, Florida and Georgia. Dr. C. W. Roberts, of Atlanta, will deliver the W. J. Love Memorial Address, his subject being: "Fine Art in Surgery."

Officers of the Association are Dr. Marion T. Davidson, Birmingham, Ala., President; Dr. E. H. Greene, Atlanta, Ga., First Vice-President; Dr. Clayton E. Royce, Jacksonville, Fla., Second Vice-President; Dr. Frank K. Boland, Atlanta, Ga., Secretary-Treasurer; Dr. Gilbert F. Douglas, Birmingham, Ala., Chairman of the Council.

Among the Georgia doctors who will take part in the program are Drs. A. R. Bush, Hawkinsville, Ga.; J. C. Wall, Eastman; Steve Kenyon, Dawson; T. L. Ross, Macon; Mary J. Erickson, Thomasville; A. R. Freeman, Albany; M. A. Ehrlich, Bainbridge; Jack Norris, Atlanta; Enoch Callaway, LaGrange; J. A. Redfearn, Albany; Carter Smith, Atlanta; E. F. Wahl, Thomasville; E. G. Ballenger, Atlanta; Steve Brown, Atlanta; John C. Keaton, Albany; Wallace L. Bazemore, Macon; Rudolph Bell, Thomasville; C. W. Roberts, Atlanta; Francis P. Blackmar, Columbus; H. C. Crawford, Atlanta; I. W. Irvin, Albany; Murdock Eucken, Atlanta; B. H. Minchew, Waycross; G. H. Lang, Savannah; J. J. Clark, Atlanta; J. J. Collins, Thomasville; H. M. Tolleson, Eastman; W. G. Elliott, Cuthbert; John E. Walker, Columbus; J. M. Barnett, Albany; R. C. Pendergrass, Americus; Joe H. Boland, Atlanta; Dan Elkin, Atlanta; W. B. Crawford, Savannah; W. A. Selman, Atlanta; A. H. Hilsman, Albany; B. T. Wise, Americus; J. P. Tye, Albany; J. N. Brawner, Jr., Atlanta; Ben Bashinski, Macon; M. Hines Roberts, Atlanta; R. H. Oppenheimer, Atlanta; G. J. Dillard, Columbus; John Fitts,

Atlanta; Trimble Johnson, Atlanta; Crawford Barnett, Atlanta; M. S. Dougherty and George F. Klugh, Jr., Atlanta.

BOOK REVIEW

The Surgical Technic of Abdominal Operations. by Julius L. Spivak, 718 pages. S. B. Debour, publisher, 1937.

An excellent operative surgery dealing with the "how to do it" rather than the "what to do." It is entirely a book of surgical technic with a correct sequence of the steps of each operation well illustrated. While it makes a good text for the beginner, it also serves as a splendid reference book for the practicing surgeon who wishes to review the technic of the operation he is going to perform.

There are 677 illustrations and any surgeon may pick up some valuable minor details by simply "looking at the pictures."

EDGAR BOLING, M.D.

"BENZEDRINE SULFATE" IN POST-ENCEPHALITIC PARKINSONISM

Solomon, P., Mitchell, R. S. and Prinzmetal, M.—
J.A.M.A. 108:1765 (May 22) 1937

A series of twenty-eight cases suffering from classic post-encephalitic parkinsonism were treated with either "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.) alone or with the addition of scopolamine or stramonium. Results according to symptoms were as follows:

Number of patients exhibiting symptoms: Lack of energy, 26; inability to work, 28; lack of strength, 26; tremor, 16; rigidity, 26; drowsiness, 24; oculogyric crisis, 8. Percent improved as to symptoms: Lack of energy, 96; inability to work, 79; lack of strength, 73; tremor, 44; rigidity, 77; drowsiness, 95; oculogyric crisis, 100.

Fifteen, or 53 per cent, were improved from "Benzedrine Sulfate" alone and twenty-six, or 93 per cent, reported improvement from "Benzedrine Sulfate" with the addition of stramonium or scopolamine. "Benzedrine Sulfate" was found to be most effective when used in combination with these two drugs. Results in oculogyric crisis were particularly striking. This symptom was eliminated in six and greatly dimin-

ished in two of the eight patients subject to these attacks.

Additional experiments were tried with ten cases of arteriosclerotic parkinsonism and in a selected group of twenty-two psychoneurotics. Results were not favorable in these conditions and in some cases untoward effects developed.

The average maintenance dose in post-encephalitic parkinsonism was 10-20 mg. two or three times a day, although as much as 160 mg. a day for three weeks was taken by one patient without apparent harm. No evidences of tolerance or habit-formation were observed.

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., August, 1937

Number 8

COMMITTEE REPORT STUDY OF MATERNAL MORTALITY AND INFANT DEATHS—1936*

H. F. SHARPLEY, JR., M.D., *Chairman*
Savannah

*Maternal Mortality in Georgia During 1936**

A brief statistical review of Georgia's maternal mortality has been made. Also a detailed study has been attempted of every assigned puerperal death in the State during 1936.

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STATISTICS

This Committee realizes that statistics on maternal mortality embraces a complexity of conditions, therefore great care must be exercised in comparing them, for an unknown factor may be present making the comparison false which we think to be representative.

While being in a position to know that there is ample room for improvement in our mortality rates, the committee undertook to determine quantitatively just how high Georgia's maternal rates were. This quantitative

study of our high rates ended as a surprise in finding some praiseworthy facts about maternal rates as noted below. The Committee being composed of clinicians and not statisticians wonders if the data has not prevaricated in its hands.

GEORGIA'S MATERNAL MORTALITY

Georgia, a southern state, is only one of about half the states having a maternal death rate higher than that for the United States. Georgia's maternal death rate has been improved.

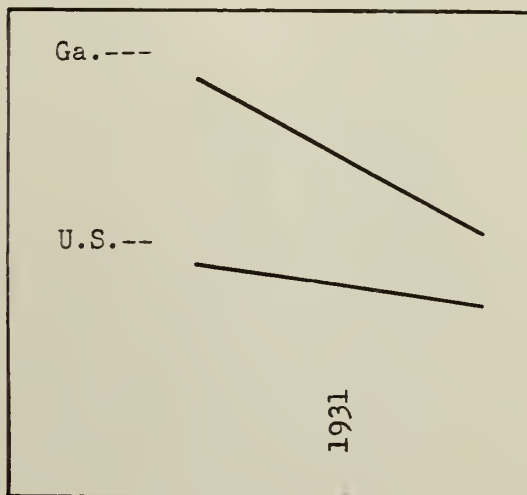


Table (Graph) 1
Maternal Mortality in Georgia
1929-1934

Georgia compares most favorably with other states in the decrease of maternal death rates. Available data for comparison covers only the years since our State entered the registration area up to 1934, which practically embraces the period of economic depression.

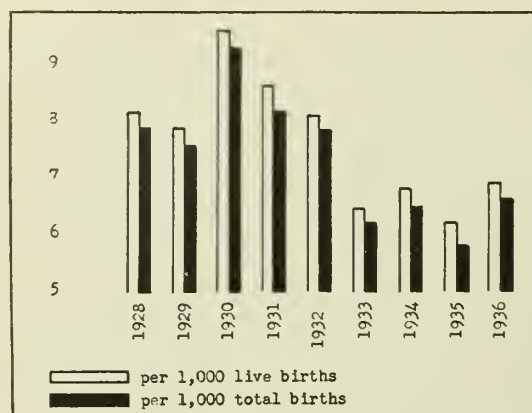
MATERNAL MORTALITY IN GEORGIA

White and colored maternal mortality rates for each year were computed on the basis of maternal deaths per 1,000 total births and compared with the maternal rates per 1,000 live births. This comparison of maternal rates between total and live births is shown in Table 2 for white, and Table 3 for colored.

Table (Graph) 2

Comparison of White Maternal Rates
Per 1,000 Total Births with
Per 1,000 Live Births

*Report of the Committee for the Study of Maternal Mortality and Infant Deaths to the House of Delegates of the Medical Association of Georgia, Macon, May 11, 1937.



The maternal rates per 1,000 live births and per 1,000 total births parallel each other in both races.

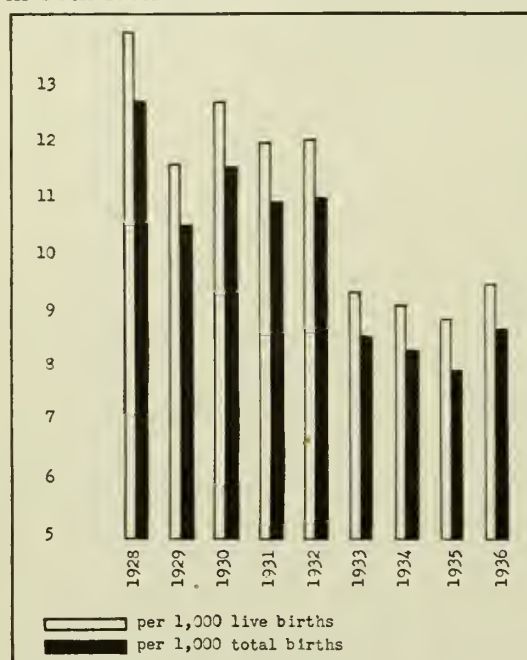


Table (Graph) 3

Comparison of Colored Maternal Rates
Per 1,000 Total Births with
Per 1,000 Live Births

In the colored race there is a definite greater separation between the two rates than in the whites. This is due to the larger percentage of stillbirths in the colored race where more prenatal antisiphilitic treatment is needed. However, maternal rates and not stillbirth rates are being discussed here. We find that

stillbirths affect our maternal rates a great deal more in the colored than in the white. Therefore, is not a State like Georgia, with a large percentage of negroes, placed at a disadvantage, if not in other ways, through rate determination alone?

Note the reduction in our maternal rates in both races.

COUNTIES WITH HEALTH OFFICERS

The organized counties have a higher rate as shown in Table 4.

Contained in the organized group are the counties with the larger cities and their hospitals. The organized counties may be reporting with more accuracy births and deaths.

At the present time could it be said that in dealing with diseases, such as diphtheria, smallpox and the like, that the burden of their prevention can be carried well by the health officer, whereas in obstetrics the bulk of prevention of mortality is dependent upon the medical profession as a whole through their "private patient to physician contact" as a reason the organized counties did not show a percentage decrease over the unorganized?

COUNTIES WITH HOSPITALS AND CLINICS

Counties with hospitals were selected and grouped regardless of whether they were organized counties or counties with cities. The maternal death rate was determined for the group with hospitals and compared with the group of counties without hospitals. This comparison is shown in Table 5.

Table 5

Maternal Deaths and the Rates in Counties
With and Without Hospitals—1936

	No. of Births (live)	No. of Maternal Deaths	Rate
With Hospitals	27,407	298	10.87
Without Hospitals	33,919	182	5.36

The counties without hospitals, being thinly populated counties, possess the lowest rate in most instances.

A similar study of the counties with and without prenatal clinics is shown in Table 6.

Table 6

Maternal Deaths and the Rates in Counties
With and Without Clinics—1936

	No. of Births (live)	No. of Maternal Deaths	Rate
With Clinics	16,882	159	9.4
Without Clinics	44,444	321	7.22

Some improvement in the rate is noted when compared with the hospitals grouping

Table 4

Maternal Mortality in 1936 Organized and Unorganized Counties

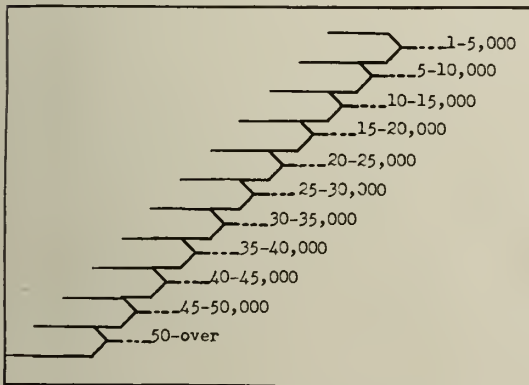
	Rate per 1,000 Live Births				Number			
	1936	1935	1934	1933	1936	1935	1934	1933
Organized Counties	9.4	8.4	8.8	8.8	242	223	237	219
Unorganized Counties	6.9	6.4	7.1	6.8	243	235	268	244

of counties, through the admission of counties without hospitals to the group. Counties which do not possess both a hospital and a prenatal clinic have the same rate as counties without clinics. Although some counties have more than one clinic, only 20 of the 159 counties in Georgia have prenatal clinics.

BIRTHS IN COUNTIES BY POPULATION

Since the health officers, hospitals and clinics are principally situated in the heavier populated counties, a systematic study of the birth and maternal death rates in both races by counties grouped according to their population was undertaken. This should eliminate errors in rate-making due to service the hospitals render to counties without hospitals. Counties have been placed in groups for each 5,000 population.

Method of Grouping Counties by Population in Multiples of 5,000 as Used in Tables 7, 8, and 9



For each group of counties, the total live births were next determined. For determining the rate, the exact population of each county in the group was used and not the population in multiples of 5,000 as was used to group the counties. In this way, the live birth rates per 1,000 population were accu-

ately computed for each group as shown in Table 7.

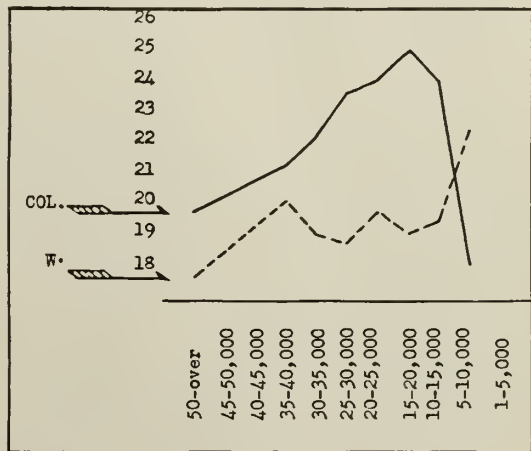
Table (Graph) 7

Counties Grouped by Population in Multiples of 5,000 (Live Births per 1,000 Population) 1936

The counties of larger populations have the lowest birth rates; counties with populations of 10,000 to 20,000 possess the highest. This is probably due principally to the colored birth rate which appears to be highest in counties of about this population as shown in Table 8.

Table (Graph) 8
1936

Counties Grouped by Population in Multiples of 5,000, White and Colored (Live Births per 1,000 Population)



The white rate falls as the higher populated counties are approached. The colored birth rate is highest in counties of 10,000 to 20,000 population and falls as either the thicker or thinner populated counties are approached.

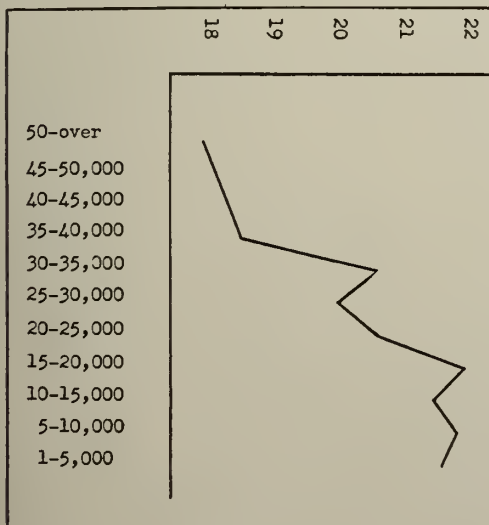
MATERNAL DEATHS IN COUNTIES BY POPULATION

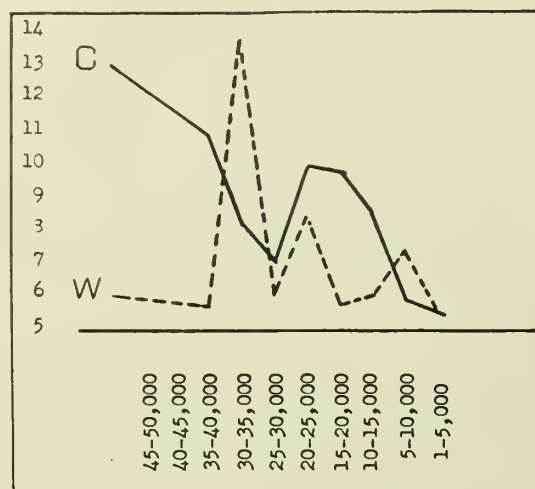
The maternal death rate per 1,000 live births was accurately computed for each group of counties, grouped as described above under births. This is shown in Table 9.

Table (Graph) 9
1936

Counties Grouped in Population in Multiples of 5,000, White and Colored (Maternal Deaths per 1,000 Live Births)

The white maternal curve is lower than the colored. The white maternal death rate is high in counties of 30,000 to 40,000. Both curves are lower in the thinly populated counties where the birth rates are highest. The colored curve is high in counties of 10,000 to 20,000 population where, also, the colored birth rate is highest. In the cities or





heavily populated counties where the birth rate is lowest, the colored maternal death rate is high and the white rate low.

We might add that 40 per cent of the white deaths from eclampsia in the entire State made emergency admissions to hospitals which are located in the heavily populated areas where the white maternal death rate is not high. Does this not speak well of the work being done by white hospitals? For comparison, only 12 per cent of the colored deaths from eclampsia in the State made emergency hospital admissions. Death from eclampsia was about equal in both races.

LIVE BIRTHS, STILLBIRTHS AND MORTALITY RATES

During 1936, there were 61,327 live births and 480 maternal deaths. One puerperal death occurred for every 128 live babies born. Live births, stillbirths, maternal and infant deaths and mortality rates are shown in Table 10.

Table 10
Live Births, Still Births, Infant and Maternal Mortality in Georgia for 1936

	Total	NUMBER		RATE		
		White	Colored	Total	White	Colored
Live Births	61,327	36,023	25,304	20.1	18.5	22.9
Still Births	3,627	1,434	2,193	59.1	39.8	86.7
Infant Mortality	4,316	2,111	2,205	70.4	58.6	87.1
Maternal Mortality	480	248	232	7.8	6.8	9.1

xx per 1,000 population.
x per 1,000 live births.

The colored birth rate is higher than the white. The stillbirths and infant mortality rates are greater in the colored race. There is a difference of 2.3 in the maternal death rate between the two races. Eliminating the stillbirths for comparison, the colored maternal rate remains higher by 1.9.

BIRTHS

Besides the 61,327 live births, there were 3,659 stillbirths. These were enumerated by the attendant and are shown in Table 11.

Table 11
Live Births and Still Births by Attendants
1936

	Live Births	Still Births
Total	61,327	3,659
Physician	36,466	1,932
Midwife	24,598	1,638
Other	263	89

The physicians delivered approximately 59 per cent and the midwife 40 per cent. There remains 352 births which were delivered by others or were unattended.

MATERNAL DEATHS

There were 480 maternal deaths, making Georgia's rate 7.8. The age and marital statistics of this group are of interest as shown in Tables 12 and 13.

Table 12
Maternal Deaths, Age and Race—1936

	White	Colored
Lowest Average	14	14
Highest Average	53	47
Average Age	27	26

Table 13
Maternal Deaths by Marital Status and Race
With Percentage—1936

	Total	White	Colored
Total	477	248	229
Single	65	18	47
Married	412	230	182

To obtain detailed information on the maternal deaths, a questionnaire with the return envelope and stamp supplied was sent to every physician by whom an assigned puerperal death was reported to the Georgia Bureau of Vital Statistics. Many duplicates of the questionnaires were re-sent in many instances, and three to four times in many others.

Table 14
Replies to Questionnaires—1936

	White	Colored
Total Deaths	248	232
No Replies	61	63
Incomplete Replies	18	34
Complete Replies	169	135
Total Replies	187	169

CAUSES OF MATERNAL DEATHS

Negroes possess the higher rates in albuminuria and eclampsia, septicemia, septic abortion, ectopic gestation and deaths of unknown causes as shown in Table 15.

The causes of death are shown twice. On the left they are enumerated for the entire 480 maternal deaths, absorbing all knowledge through the complete and incompleting questionnaires. To the right, only the completed questionnaires are tabulated. Septic

abortion is the only condition in which the per cent in colored and white reversed itself in the two compilations.

Note that albumin and eclampsia, septicemia and septic abortion lead in the causes of death.

ECLAMPSIA, PUERPERAL SEPSIS, AND ABORTIONS

This triad of diseases accounted for exactly two-thirds of Georgia's assigned puerperal deaths for 1936.

Table 15
All Maternal Deaths with Percentage and Maternal Deaths of Fully Completed Questionnaires with Percentage by Race—1936

	Total deaths using complete, incomplete and uncompleted questionnaires.						Total deaths using only completed questionnaires.					
	Total	%	W	%	C	%	Total	%	W	%	C	%
Album. & Eclamp.	149	31.0	71	28.6	28	33.6	93	30.6	46	27.2	47	34.8
Septicemia	124	25.8	63	25.4	61	26.3	87	28.6	44	26.0	43	31.8
Abortion Sepsis	45	9.4	20	8.1	25	10.8	25	8.2	14	8.3	11	8.1
Non-Obstetrical	45	9.4	26	10.5	19	8.2	35	11.5	21	12.4	14	10.4
Hemorrhage	44	9.2	25	10.1	19	8.2	27	8.9	17	10.1	10	7.4
Accidents of Labor	21	4.4	12	4.8	9	3.9	12	3.9	7	4.1	5	3.7
Unknown	20	4.2	8	3.2	12	5.2	5	1.6	2	1.2	3	2.2
Embolism & Sud. Death	16	3.3	12	4.8	4	1.7	10	3.3	10	5.9	0	.0
Abortion Hemorrhage	6	1.3	4	1.6	2	.9	2	.7	2	1.2	0	.0
Ectopic Gestation	5	1.0	2	.8	3	1.3	3	1.0	1	.6	2	1.5
Vomiting of Pregnancy	5	1.0	5	2.1	0	.0	5	1.6	5	3.0	0	.0
Total	480		248		232		304		169		135	

DISTRIBUTION OF CAUSES OF MATERNAL DEATHS BY ATTENDANTS

The accompanying Tables 16 and 17 show these distributions:

Table 16
Maternal Mortality Attendant by Race—1936

	Total	White	Colored
Physician	181	127	54
Midwife	66	12	54
M.W. & Phy.	18	5	13
Other	10	7	3
Unattended	29	18	11
Total	304	169	135

Infection and eclampsia are well distributed between primiparas and multiparas, while abortion is far more prevalent in multiparas.

Each of these diseases will be considered briefly in the order of their prominence.

ECLAMPSIA

Approximately 30 to 33 per cent of our maternal deaths were due to albuminuria, nephritis and eclampsia. The distribution of deaths between the white and colored race is

Table 17
Maternal Deaths Attendant by Cause in 1936

	Physician	Midwife	Phy. & M. W.	Unattended	Physician	Midwife	Phy. & M. W.	Unattended	Physician	Midwife	Phy. & M. W.	Unattended
	TOTAL				WHITE				COLORED			
Abortion (Septic)	12	3	..	10	6	1	..	..	6	2	..	3
Abortion (Hemorrhage)	2	..	..	..	2	..	..	..	..	..	..	..
Ectopic	2	..	..	1	..	..	..	1	2	..	..	..
Hemorrhage	16	6	2	3	12	2	1	2	4	4	1	1
Sepsis	45	26	9	7	31	5	3	5	14	21	6	2
Alb. & Eclamp.	57	19	6	11	41	2	..	3	16	17	6	8
Nausea	5	..	..	..	5	..	..	..	..	..	..	..
Embolism & Sudden Death	10	..	..	..	10	..	..	..	..	..	..	..
Accidents of Labor	9	2	..	1	6	..	..	1	3	2	..	..
Non-Obstet.	23	6	1	5	14	1	1	5	9	5	..	..
Unknown	..	4	..	1	..	1	..	1	..	3	..	..
Total	181	66	18	39	127	12	5	25	54	54	13	14

The physician attended more white than colored maternal deaths. The bulk of the cases attended by midwives were negroes.

Attention is called to 39 patients who were attended by others, or were unattended. Twenty-five of these were white and 14 were negroes.

approximately equal. Deaths occurred principally during the puerperium.

Probably many of these deaths could have been prevented had facilities been available other than those found in the usual home. On the other hand, four (white) of the 93 who died from eclampsia were operative de-

liveries with eclampsia being given as the sole and only indication for operation. the value of such care were generally and strongly adopted by the people in general it

Table 18
Three Main Causes of Maternal Death in 1936

	Total	PRIMIPARA		Total	MULTIPARA	
		White	Colored		White	Colored
Eclampsia	44	27	17	47	18	29
Infection	44	18	26	44	26	18
Abortion	7	3	4	20	13	7

Table 19
Eclampsia—Time of Death—1936

	Pregnancy	Labor	Puerperium
Total White	8	2	36
Total Colored	4	7	36
GRAND TOTAL	12	9	72

Twelve per cent of the deaths from this disease were unattended.

Table 20
Eclampsia by Attendant in 1936

Physician	57
Midwife	19
Phy. & M. W.	6
Other	1
Unattended	10
Total	93

This distribution of the death in multipara according to the number of pregnancies is shown in Table 21.

Table 21
ECLAMPSIA

PRIMIPARA			MULTIPARA Number of Children											
		Total	2	3	4	5	6	7	8	9	10	11	12	
White	27	19	3	5	4	5	3	2	1	..	..	..	..
Colored	17	30	3	2	10	1	4	2	2	2	..	1	3	
Total	44	49	6	7	10	6	7	4	3	2	..	1	3	

Sixty-two per cent of the deaths occurred at home as shown in Table 22.

Table 22
Eclampsia—Place of Delivery—1936

	HOME		HOSPITAL	
		Planned	Emergency	
White	19	9	18	
Colored	39	2	6	
Total	58	11	24	

A far more vital point in considering eclampsia is prenatal care. No attempt was made to check on the adequacy of the prenatal care given to the 93 patients who died from eclampsia. A brief study of the number of visits made by this group of patients is shown in Table 23.

Table 23
Eclampsia—Prenatal Care by Visits in 1936

	None	1	2	3	4	5	6	7	8	9	10	Over
White	16	9	5	5	1	1	0	1	0	1	0	7
Colored	33	8	3	1	1	1	0	0	0	0	0	0
Total	49	17	8	6	2	2	0	1	0	1	0	7

With all the means of modern communication of today, the knowledge of the importance of prenatal care did not reach the ears of many of the patients dying with eclampsia. If this group had ever heard of prenatal care, then they were only feebly impressed with its value. If the knowledge of

surely would have traveled by the oldest means of communication, namely, hearsay, to the ears of 70 per cent of this group who made none, or only one visit, before eclampsia took their lives.

PUERPERAL SEPSIS

Our maternal death rate would be 5.0 per 1,000 live births if all infection were eliminated.

Excluding all hospital emergency admissions where outside contamination may have preceded, and using only planned admissions for the basis of this study where the physician had sterile facilities for entering the uterus, nine patients died of puerperal infection. In one, the vulva was scrubbed by the physician

and in eight this procedure was entrusted to the nurses. Many vulva preparations were entrusted to midwives by physicians in preparation for their entry into the uterine cavity for various purposes.

It would seem that the nurses are in need of more careful instruction or supervision. Our suggestion would be that the physician in the home or hospital supervise, or do his own scrubbing of the patient unless he is positive that the nurse or midwife he entrusts this to be competent. For regardless of how sterile he prepares himself or how skillful a maneuver he may make, all will be for naught if the patient is not properly pre-

pared for each and every vaginal examination or other manipulation.

This preventable disease is slightly lower in negroes due to a larger percentage of septic abortions in the white multiparas. (Table 24.)

Table 24
Total Infections by Race in 1936

	WHITE			COLORED		
	Total	Pri.	Mul.	Total	Pri.	Mul.
Abortion Sepsis	14	3	11	11	4	7
Puerperal Sepsis	44	18	26	43	25	18

With the elimination of the septic abortions, puerperal sepsis is about equal in both races.

The percentage of deaths from infection with the midwife as the attendant is high. (Table 25.)

Table 25
Puerperal Infection by Race and Attendant in 1936

	TOTAL		WHITE		COLORED	
	No.	%	No.	%	No.	%
Total	87		44		43	
Physician	45	51.72	31	70.45	14	32.55
Midwife	26	31.03	5	11.35	21	48.83
M.W. & Phy.	9	10.35	3	6.81	6	13.72
Unattended	6	6.88	5	11.35	2	4.65

We presume that these were normal deliveries, as the midwife is possessed with no special knowledge to handle abnormal deliveries.

Of the 87 deaths from puerperal infection, the uterine cavity was known to be invaded, or a vaginal examination made, in 53 per cent of the cases, exclusive of nine cesarean sections, for various reasons as shown in Table 26.

Table 26
Puerperal Infection
Causes for Entering Uterus or Vagina in 1936

	INDUCTION OF LABOR								
	Catheter	Bag	Rupture of Membrane	Unknown					
Forceps	10								
Version	3								
Breech	2								
Vaginal Exam.	17								
Manual Removal of Placenta	4								
	4	0	2	36					78

In the accompanying Table 27, it is shown who scrubbed the vulva in 87 cases of puerperal infection exclusive of nine cesareans.

Table 27
Puerperal Infection
Attendant Scrubbing Patient—1936

Not Scrubbed	Physician	Nurse	Midwife	Unknown	Total
28	12	17	8	13	78

In reviewing the questions asked by the State Board of Nurses for Georgia to determine the stress laid on the prevention of puerperal sepsis an excellent question was noted which was asked in 1934, in four parts, as follows:

(a) Should as sterile and aseptic technic be maintained in the delivery room as in the operating room?

(b) How do bacteria usually reach the uterus during labor?

(c) How can this be prevented?

(d) If not prevented, what puerperal disease is likely to follow in about one week?

A large percentage of the non-obstetrical

deaths were pneumonia. Is it not possible that some of these were terminal stages of sepsis?

There seems to be some confusion between sepsis and uremia in filing the certificate of death.

Of the cases of puerperal sepsis there were only two that could be classified as having an autogenous cause.

It is reported that the midwives themselves did vaginal examinations in 37 cases. All of these may not be authentic. However, 15 of these died from puerperal sepsis. *This draws criticism from the Committee.*

Nine of 21 deaths from cesarean section were attributed to sepsis.

ABORTION

Georgia's puerperal death rate was 7.8.

If everything except the full-time delivery be excluded, the rate as calculated would be 4.8, better known as the obstetrical rate. The universal adoption of such a system of two rates would separate the abortion and ectopic and the like from the full-term deliveries and shed some light on premature labor. Classification for such rates could be determined from the answer to a question on the birth certificate giving the length of the baby in inches. In 1936, of the 304 cases of maternal deaths studied, 137 occurred at full-term, 62 died in the third trimester of pregnancy and the remaining 55 died earlier in pregnancy.

During 1936, only two deaths were from hemorrhage; the remainder were due to sepsis. The distribution between white and colored is shown in Table 28.

Table 28
Abortions by Race—1936

	Total	White	Colored
Septic Hemorrhage	25	14	11
	2	2	0

CHARITY CASES

In reply to the question, "Is this a charity patient?", 20 were unanswered of the 181 cases of death attended by physicians. Seven more were on a semi-charity basis. Of the remaining 154 cases, 42 per cent were charity and 48 per cent private. From our many personal communications in the questionnaires, this latter group should be subdivided into the private and non-pay private.

Forty private patients and 19 charity patients were delivered at home. Nineteen charity and 21 private patients planned their admission to the hospitals, while 27 charity and 28 private cases were emergency hospital admissions. Twenty per cent of the charity patients and 35 per cent of the private cases were operative deliveries.

MIDWIVES

In reviewing the questionnaires, there is considerable friction directed at the midwives. We agree that at the present time in

Georgia there is room for improvement in our midwife system. However, on the other hand, they do handle a great deal of our obstetrical poverty. Without them, would not our unattended deliveries increase? With better education, more instruction, and closer supervision, can they not be uplifted from a bare necessity to a valuable asset in the communities of our State

UNATTENDED DELIVERIES

There were 352 unattended births, of which 263 were live births and 89 stillbirths. There were 39 maternal deaths which were unattended. Below are two examples of the unattended deliveries. One was reported by a local registrar and the other by a physician.

AN UNATTENDED DELIVERY

(Reported by Physician)—1936

"This patient had had flu and had pneumonia. I made one visit and found out that she had pneumonia. I went back when in labor, only one visit, and I was dismissed. The Holiness preacher and sisters came and had the doctor dismissed and she died the third day."

AN UNATTENDED DELIVERY

(Reported by a Local Registrar)—1936

"This patient lived on a small farm a few miles from ——. She was pregnant for the normal time of nine months with no medical care whatsoever. She was in the field, about 50 yards from her house when labor started and she delivered in the field herself, alone. She carried the living baby to her home and went to bed. There was no bleeding at all, and she was in severe pain and started swelling all over. She continued to swell and suffered for several days, then died. The baby lived for a week or two, then died.

"No medical aid was summoned at any time and her ignorant mother, who was at home, was drinking, therefore in no condition to nurse the sick daughter, so I am told. I did not see this patient, but was told that their house leaked and that she was on a bed wet by the rain.

"She was the mother of another child, who was near two years old, who died a few months after the mother died."

CONCLUSIONS

We might state that maternity work was more or less considered a clinical subject while we busied ourselves with the prevention of communicable diseases. Have we become more proficient in preventive medicine and are now ready to absorb the maternal question, or have we removed other diseases from our view until the rates on maternal care stand out? This question leads to the next which is often asked: "What is the cause of our high maternal rates?" This question is probably best answered: "That rather suddenly we find that obstetrics is not only a clinical

subject, but one which has a large and complex preventive field carrying with it an army of details." It costs money to eradicate communicable diseases. Education costs money. Collection and dissemination of data costs money. From this point of view, obstetrics is also a financial one.

How shall money be spent to obtain the greatest reduction in our maternal death rates in Georgia? This is a question to be determined. It would seem that at the present time, that finer divisions of our mortality rates will have to be made before we could detect with any accuracy any improvement in our rates for the money spent, as related interwoven subjects might disguise these benefits.

From our present study of Georgia's maternal mortality we may enumerate some of the outstanding factors which are contributing to our high rates and improvements in others which would lower our rates.

1. Establishment of prenatal stations throughout the State. Education of the public as to the value of prenatal care.

2. Education of all medical personnel as to proper aseptic technic at delivery with special consideration given to the preparation of the vulva, before vaginal examination or intrauterine manipulations are to be undertaken.

3. Education of the public in regard to abortion.

4. A more vigorous program directed at the stillborn delivery, through antisymphilitic treatment to patients with prenatal syphilis.

5. Better balance between conscientious prenatal care on the one hand and the elimination of radical operative procedures on the other.

6. A gradual program of education to the midwives, while approaching a more strict enforcement of their regulations.

7. Means to provide for the poverty stricken obstetrical patient and unattended deliveries.

Sixty thousand deliveries a year is a heavy task. The Committee has not lost sight of the fact that the physicians of Georgia attend to more than half of these deliveries, supply all prenatal care except what is supplied in the clinics of 20 counties, in addition took over a large percentage of midwife deliveries, and, while shouldering this heavy burden, they have reduced the mortality rate.

The Committee thanks the physicians for their cooperation in supplying the data asked in the questionnaires. To Dr. Bowdoin and Dr. Bickerstaff of the Bureau of Child Hygiene we acknowledge assistance, with thanks. Mr. Butler Toombs of the Bureau of Vital Statistics has rendered valuable aid to the Committee. We thank Dr. F. B. Schley of Columbus for his assistance.

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ACUTE AND CHRONIC HYPERTHYROIDISM

*Report of Cases**

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The terms *acute* and *chronic* are not often used in discussing the toxic state of the thyroid gland, but there are times when they are applicable and most descriptive of the clinical picture presented. Diffuse toxic goiter, most often referred to as exophthalmic goiter or Graves disease, is frequently acute in its onset. In most instances the symptoms have developed gradually over a period of several weeks to several months, but occasionally we see patients in whom the symptoms began suddenly following definite psychic shock. We have known patients who apparently developed over night an enlarged, pulsating thyroid gland, with exophthalmos, tachycardia and extreme nervousness.

One of our patients, Mrs. B. L. O., aged 37, was in an automobile accident and sustained a severe injury; one of her children was killed. Within 48 hours after the accident she developed all the symptoms characteristic of acute thyrotoxicosis, with an enlarged and pulsating thyroid gland and marked exophthalmos. When we first observed her several weeks later, her basal

metabolic reading was plus 100 per cent, and the pulse rate was 146. She was given iodine and rest in bed two weeks, and her basal metabolic reading dropped to plus 39 per cent; pulse to 108. A subtotal thyroidectomy was performed and she made an uneventful recovery.

Another patient, Mrs. W. L. B., aged 38, developed an acute diffuse toxic goiter suddenly after the visit of a burglar to her bed room. She did not see the burglar, but discovered, upon awakening the next morning, that her bed room had been entered, and her jewelry was missing from the bedside table. The fact that an unknown and unseen burglar had stood over her during her sleep was sufficient psychic shock to touch the trigger and set off the explosion which followed. Her basal metabolic reading was plus 18; pulse rate 120. Following a subtotal thyroidectomy she made an uneventful recovery and has remained well for ten years.

In neither of these two cases was there indication of previous thyroid disease.

Acute toxic goiters were not uncommon among the soldiers in the American Expeditionary Forces in France during the World War, but often they developed suddenly following a first "baptism of fire" or first battle. The soldiers were practically perfect physically, having been examined repeatedly; and no known goiter victim was sent to the front. The psychic shock, or nerve tension, was too much for men who were evidently potential goiter victims before becoming soldiers. To our embarrassment in some instances, these soldiers with acute thyrotoxicosis were not diagnosed accurately, but were considered "yellow" when their nerves gave way under the strain, while others were pronounced victims of shell-shock until the correct diagnosis was finally reached. We think the term acute thyrotoxicosis or acute hyperthyroidism might well be applied to this type of patient.

Hyperthyroidism is a state or condition in which the individual patient is affected by an excess of thyroid secretion, or thyroxin, as the result of an overactive thyroid gland. Hypothyroidism is the opposite condition, as result of a decrease in thyroxin.

For several years the recognized test for hyperthyroidism and hypothyroidism has been the basal metabolic rate, and the rule usually accepted as a standard is: "If hyperthyroidism is present the basal metabolic rate is above normal; and if the basal metabolic rate is normal, then no hyperthyroidism exists." In most instances this rule is dependable, provided the test has been made by an expert laboratory technician with

*From the Department of Surgery, Emory University School of Medicine, Emory University.



FIG. 1. Acute hyperthyroidism (high B. M. R.) following severe injury. Specimen removed.

a reliable machine, but certainly there are exceptions. Link in an excellent paper on "The Basal Metabolic Rate" has called our attention to what a delicate test the basal metabolic reading is, and how easy it is, even for an expert technician, to be in error; one must not accept either a single high reading or a normal reading as proof for or against thyroid toxicity when it does not agree with the clinical findings.

For several years we have noticed goiter patients with toxic symptoms whose basal metabolic readings were normal or subnormal. Most often the goiters have been present for several years before the symptoms became noticeable, and some of the patients had been to several doctors who told them that they had no goiter, because the basal metabolic reading was not elevated above normal. These patients had visible enlargement of the thyroid gland and definite symptoms of thyroid toxemia. The symptoms in this class of patients are insidious in their development, and frequently it is difficult to determine just when the illness began. Usually the complaints are: fatigue, nervousness, emotionalism, palpitation of the heart, insomnia, choking sensation, increased sweating, tremor of the hands and, in some instances, loss in weight. A patient may have one or more of these symptoms, but rarely all of them. Exophthalmos is rare in this type of patient, but many of them have a definite stare. Tachycardia is not uniformly present and the pulse rate is probably normal when taken with the patient at rest, but responds to a given amount of exertion which may be considered a relative tachycardia.

To this group of patients with unmistakable signs and symptoms of thyroid toxemia

who have persistent low basal metabolic rates, we have applied the classification *chronic hyperthyroidism*. We have collected from our case records a group of 76 consisting of both diffuse and nodular goiters. Every patient in this series had definite symptoms of thyrotoxicosis and in no instance was the basal metabolic rate above normal; it varied from minus 37 per cent to plus 12 per cent, with an average of plus 2.5 per cent.

Clute, in 1928, called attention to a small group of borderline cases of hyperthyroidism with normal or subnormal basal metabolic readings. Troell, in 1932, reported 14 similar cases, and Plummer at the Mayo Clinic, in 1931, reported a case of hyperthyroidism with a basal metabolic reading of minus 9 per cent. In 1934, Gordon and Graham reported a series of patients of both diffuse and nodular toxic goiters in whom the basal metabolic reading was consistently low. Link, in 1934, published an excellent article on "Mild Chronic Thyroidism." Young reported recently a small series of cases of "Chronic Hyperthyroidism," and Hertzler refers to this condition in his recent book on "Surgical Pathology of the Thyroid Gland."

This group of patients may be considered mildly toxic as compared to the more typical and easily diagnosed toxic goiter and many of them, being borderline cases, are readily confused with other conditions. The toxic state being mild and of a chronic nature, and often extending over a period of years, with remissions and exacerbations, is undoubtedly affected by focal infections, emotional stress, heavy work and increased responsibility. These factors have been referred to as causes of thyroid disease when in reality they are only exciting factors in an already existing diseased thyroid gland. Focal infections



FIG. 2. Chronic hyperthyroidism (low B. M. R.), toxic symptoms. Specimen removed.

Table I. CHRONIC HYPERTHYROIDISM						
Number of Cases	Average Age	Sex	Average Duration of Goiter	Average Duration of Symptoms	Average Pulse	B.M.R. Av. Plus 2.5
26 diffuse	36 yrs.	71 F.	8 years	18 months	88	
50 nodular		5 M.				
76 Total						

Table II. SYMPTOMS <i>Nervousness present in all cases.</i>					
Pressure	Tachycardia	Sweating and Tremor	Fatigue	Loss in Weight	Other Symptoms
60	59	53	35	30	30
(80%)	(78%)	(70%)	(46%)	(40%)	(40%)

Table III. OPERATIONS					
No. of Operations	Amount of Gland Removed	Anesthesia	Complications	Specimen Examined	Days in Hospital
76	10 Lobectomy 66 Subtotal	10 General 66 Local (Novocaine ½ of 1%)	2 P-O fever	76	8

Table IV. RESULTS					
Relieved of Symptoms	Improved	Recurrence	Adeno-carcinoma	Mortality	
61	15	2*	2*	None	
		*In 8 and 10 years	*Well after 1 and 9 years		

should be sought for and removed when possible as they may aggravate a mild disorder; removal of the foci of infection may give sufficient relief.

In differentiating the borderline cases of chronic thyroid toxemia the thyroid gland should be examined carefully for a perceptible enlargement. It should be palpated with the patient seated and the examiner standing behind or to one side; the tips of the fingers are placed over the trachea, identifying the cricoid cartilage and the isthmus of the thyroid gland just below it; then palpate the two lobes of the gland with the fingers under the edges of the sternomastoid muscle, pressing the gland toward the trachea while determining its size and consistency. One must

palpate many normal glands in order to be able to recognize slight variations. As a rule, any change from normal size, contour and consistency of the thyroid gland is accompanied by a change in the physiologic function of the gland.

Just why these patients with chronic hyperthyroidism should have persistent low basal metabolic rates is not entirely clear. There are persons who normally have low metabolic rates and, therefore, a reading that would be considered normal in one individual might indicate thyrotoxicosis in another. Theoretically, it might be suggested that certain individuals with chronic hyperthyroidism have a low threshold point, as internists say of the diabetic, and there is a spilling over

of toxic products from time to time, year after year, with no appreciable rise in basal metabolic readings and finally the patient becomes aware of certain symptoms which gradually increase in severity until he consults a doctor. It is possible that the chronicity of the condition is in itself responsible for the low basal metabolic reading, in that the patient gradually establishes a tolerance to the thyroid toxemia without increase in the metabolic rate.

All patients in our series had a subtotal thyroidectomy, followed by relief of symptoms in the majority of instances. There were 5 men and 71 women in the group. The average age was 36.8 years; the duration of the goiter was 8 years; duration of the symptoms 18 months and the pulse rate was often normal but averaged 88. The myocardium was permanently damaged in a few cases.

The end-results in this group were as follows: 80 per cent were relieved of their symptoms and 20 per cent were improved. One nodular goiter recurred 8 years after operation. There were no deaths in the series. We have not included in this group any patient who received iodine as a therapeutic measure up to the time they came for treatment.

The study of this series of patients indicates that, clinically, chronic hyperthyroidism frequently occurs in the presence of a persistent low basal metabolic rate. We should be careful about accepting laboratory reports at face value when they do not agree with our clinical diagnosis. The majority of these patients were restored to normalcy by subtotal thyroidectomy. This operation in the hands of a surgeon experienced in thyroid surgery offers a cure to these patients with practically no risk to life and without danger of their condition being made worse.

		Table V. CLASSIFICATION OF GOITERS	
Diffuse	Non-Toxic	{Adolescent	
		{Colloid	
	Toxic	{Exophthalmic or Graves Disease	
		{Acute	
Nodular	Non-Toxic	{Chronic	
		{Adenoma	
		{Carcinoma	
	Toxic	{Chronic (with degeneration)	
		{Mixed (with hyperplasia)	

In our clinical work, and in teaching medical students and internes, we use the classification of goiters as recommended by

the American Association for the Study of Goiter—nodular, non-toxic; nodular, toxic; diffuse, non-toxic; and diffuse, toxic—but we believe the terms *acute* and *chronic* might well be added as sub-classifications in toxic goiters. Hertzler in his "Surgical Pathology of the Thyroid Gland," published in 1936, states: "While a classification of goiters is necessary for the purpose of study, still the different classes are only different stages of a process which is a continuous performance and all eventually end in a cardiotoxic state, and they change from one group to another at different stages of life being first non-toxic, then perhaps acutely toxic; and later, perhaps non-toxic again, or even myxedemic; and, finally, terminate with a goiter heart." The basal metabolic rate cannot be depended upon clinically to diagnose these various stages of development and degeneration.

Conclusions

1. Hyperthyroidism often develops suddenly following definite psychic shock and may run a very acute course.

2. There evidently exists a chronic hyperthyroid state in which the symptoms develop insidiously, and in which the basal metabolic reading usually remains low; these cases as a rule are relieved by subtotal thyroidectomy.

3. The terms *acute* and *chronic* are not often used in discussing the toxic state of the thyroid gland, but they appear to be most descriptive of the clinical picture presented.

4. The basal metabolic rate, while very helpful when it is elevated, should be ignored when normal or subnormal in the presence of unmistakable evidence of hyperthyroidism.

5. An important fact to bear in mind in connection with the thyroid heart, is that it is one type of heart disease which is preventable, provided the thyrotoxicosis is recognized early and subtotal thyroidectomy is performed before the heart becomes permanently damaged.

6. Because of the great frequency of cardiac disease in patients with adenoma of the thyroid, particularly in patients of middle age or beyond, removal of all adenomas before cardiac symptoms develop is indicated as an important means of prevention of heart disease.

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CLINICAL CONSIDERATION OF PARANASAL SINUS DISEASE*

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"Once a sinus, always a sinus." "Sinus operations never do any good." Such expressions, so frequently heard, indicate the dissatisfaction with which chronic sinus infection is viewed. Rhinologists themselves are not in entire accord as to how to handle this problem. Some feel that the reason for the dissatisfaction with operative results is because the therapy has not been radical enough. They advocate complete removal of every vestige of diseased membrane from the infected sinus. Others believe that the radical procedures advocated destroy so much normal mucous membrane that good functional results after operation are almost impossible. They may go so far as to decry all radical surgery. Certainly there must be a practical common sense pathway between these two views. The major part that sinus disease may play in body economy is well shown by the discussions in the literature.

Schmol and Som¹ reported 8 cases of low grade fever ranging from 99 to 102 without local evidence of sinus infection. The duration of the fever had been from one week to two and a half years. All cases cleared up

without operative procedure other than lavage of the antrums.

Carmack² reported 4 cases of septicemia with the same organism recovered from the sinus and the bloodstream. All cases recovered following sinus therapy—an intranasal antrum operation in 1 case, radical operation in 3.

Kistner³ reported many cases of various systemic diseases not cured until the infected sinus was radically treated. He stresses the fact that the infective focus may be within the mucous membrane, and eradicated only by removal of the sinus mucosa.

Hurd⁴ reported an interesting study of 386 cases of arthritis in which 68 per cent showed evidence of sinus infection. The majority of these responded well to sinus surgery.

Wesley Brown,⁵ in an article dealing with the importance of sinus infection to the general practitioner, stresses the necessity of early diagnosis and treatment. H. B. LeMere⁶ writes a similar article; and states that the pessimistic attitude toward sinus infection so frequently encountered is not justifiable.

Mullin,⁷ Ryder,⁸ Spencer,⁹ Rest¹⁰ and Sargent,¹¹ Burgess¹² and others^{13 14} comment on the major part sinuses may play in chronic or acute pulmonary disease.

Time does not permit a more complete survey of the literature.

There are two types of chronic sinus infection. In one group gross pus is present. In the other no gross pus is demonstrable; but x-ray after injection of a radiopaque oil will show irregular thickening of the mucous membrane within the sinus. The sinus secretion contains polymorphonuclear cells, and tissue removed at operation may show microscopic abscesses. Although this type of pathologic change is of clinical significance, these cases are in the minority. In most cases of clinical sinusitis gross pus is present. The diagnosis is easy, and can be made by a single x-ray film. It is to this group that I wish to direct your especial attention, for the responsibility here rests largely upon the family physician or diagnostician. It is particularly important that you realize that most of these cases have few or no local symptoms. They seek medical aid because of some distant trouble which completely obscures the mild symptoms of sinus infection. A person with a severe headache or other annoying symptoms

*Read before the Medical Association of Georgia, Macon, May 12, 1937.

is going to insist on proper treatment; but a person with a productive cough may be unaware of a postnasal discharge. A patient with aching joints may ignore a mild persistent headache. The diseased sinus is acting as a silent focus of infection; and unless the family doctor is aware of this possibility, much discouragement and loss of valuable time will result.

Postnasal discharge, while the most common symptom of sinus infection, does not always mean clinical sinusitis. A purulent discharge is very significant; but there are many instances of profuse, colorless, mucoid discharge where no definite infection can be found. This is not surprising when one realizes that almost the entire mucous membrane of the upper respiratory tract is abundantly supplied with mucous secreting glands. These glands are under the control of the sympathetic nervous system which is very responsive to external stimuli such as dust and smoke or allergic reaction. It is failure to relieve this discharge that is responsible for so much unjustifiable dissatisfaction with sinus surgery. Conversely, a purulent sinus infection may exist without the patient complaining of postnasal discharge. This occurs most frequently with antral infections. With the head erect the sinus does not overflow; but at night the sinus will empty itself without attracting the attention of the sleeping person. In chronic chest conditions the discharge may be confused with the secretion coming from below; and the sinus infection overlooked, unless one is aware of the paramount part diseased sinuses may play in this syndrome.

Headache, although usually present in acute infections, is often absent in chronic cases. This is particularly true of the maxillary sinuses which most frequently act as foci of infection.

A severe reaction in the soft tissue adjacent to an infected sinus may occur. At times the eyes may be swollen and entirely closed. This usually accompanies an ethmoiditis or pansinusitis in young children. Conservative measures should be persisted in for many of these cases will recover without surgery; or will improve so that operation may be more safely performed.

There is one of two objectives in view whenever any form of treatment in sinusitis

is undertaken. One objective is to secure adequate drainage and aeration of the infected sinus; the other is to remove all diseased mucous membrane from the sinus. The procedures of the first group are considered conservative, those of the latter radical. Conservative measures early in the course of the infection are generally successful, and never do any harm. Radical surgery certainly has its place in our armamentarium of treatment; but should not be undertaken lightly, since it may destroy normal mucous membrane of the nose and produce unpleasant after effects.

A great deal of common sense is called for in dealing with the sinus problem. The person in whom x-ray or careful examination will not show some slight deviation from the normal is probably the exception rather than the rule. Certainly, if operation is advised in everyone in whom x-ray shows some slight change in the sinus mucosa, a great deal of unnecessary and possibly harmful surgery will be done. As noted by Hurd,¹⁵ there are many instances where, although some chronic infection exists, it is not wise to do anything drastic about it. The patient may be in excellent health, and seemingly not suffering except at times when the infection flares up. There is evidence of involvement of several sinuses. Any hope of permanent relief would involve radical surgery. Here it seems to me wiser to compromise with the condition, treating the flare-ups as they occur; rather than to resort to the radical treatment necessary to secure a lasting cure; since this may leave symptoms more annoying to the patient than the original condition.

In summary: although there are cases in which no gross pus can be demonstrated, in the majority of cases of sinus infection of clinical significance, gross pus is present, the diagnosis easy, and treatment relatively simple and certain. The majority of cases where the sinus is acting as a focus of infection seek the aid of the general practitioner first because of their distant symptoms. There may be few or no local symptoms; and unless the diagnostician considers the possibility of sinus infection in every case depending upon a focus of infection, many cases will not be correctly diagnosed.

I wish to report the following cases:

Case 1. P. K., a 6-year-old girl had had a productive cough for about three weeks. Examination of the

chest was negative. There was a purulent discharge in each nares; x-ray showed dense blurring of each antrum. After three weeks' treatment there was no more pus in her nose and the cough had entirely disappeared. This is the mildest type of pulmonary manifestation that accompanies sinus disease.

Case 2. B. B., a 7-year-old girl, seen in May 1933, had had attacks of bronchitis every winter for three years. The attacks lasted almost all winter. Physical examination showed a chronic bronchitis. There was no pus seen in the nose but x-ray showed dense blurring of each antrum. Under ether anesthesia windows were made into each antrum. She spent the next winter in Florida. Since then there have been no more attacks of bronchitis.

Case 3. V. G., a 10-year-old girl, seen in April 1935, had had very frequent attacks of bronchitis and bronchopneumonia during the preceding winter. There was no pus in the nose but the x-ray showed considerable involvement of the left antrum. A rather large window was made into this sinus; since then she has had no further trouble.

Case 4. E. H., a 9-year-old girl, had been coughing up quantities of foul sputum for six weeks. A diagnosis of small lung abscess was made. There was a purulent nasal discharge and the x-ray showed marked involvement of each antrum, and to a lesser extent both ethmoids and right frontal sinuses. After removal of a portion of the inferior turbinates large openings were made into each antrum. One month later the abscess had entirely disappeared and the sinuses seemed clear. She had no further trouble.

Case 5. Miss W., a student nurse, who was in bed with a diagnosis of incipient tuberculosis, was seen in the spring of 1935. She had no symptoms of sinus infection. X-ray showed marked involvement of each antrum and to a lesser extent of the ethmoids. Active, conservative treatment of the sinuses was instituted with much improvement. Her general condition improved rapidly and in three months she was back on the job in her normal good health. The tubercle bacillus was never recovered from her sputum. Of course, it is impossible to say whether her pulmonary infection was truly tuberculous or whether it was a nontuberculous infection depending upon the sinuses as a focus. At any rate improvement in her general condition paralleled improvement in the sinuses.

Case 6. A 50-year-old man had had a postnasal discharge for about a year; he had had one acute attack of sinusitis. For the three or four months prior to the time when he was seen he had had no definite complaints but simply felt listless and generally below par. Physical examination failed to reveal any particular cause other than a rather badly diseased right antrum. This was treated by irrigation, six of which were necessary before the sinus was clean. He was seen one month later when the sinuses appeared to be in good condition, and he was much improved generally.

Case 7. E. C., was seen in September, 1935. She had had an acute sinus attack in 1930, and again in 1935 following a tooth extraction. She had had mild arthritis for several years which had not responded to treatment. X-ray showed much blurring of the right

antrum. A large window was made after resection of a portion of the inferior turbinate. This left an opening which is apparently permanent, cured the sinus infection, and was followed by relief of the arthritis.

Case 8. A. S., a 6-year-old boy, was seen in March 1934. He had had a severe cold which had apparently improved when his mother noted that the urine was cherry color and examination revealed gross blood. This focused the entire attention on the kidneys. Complete urologic examination failed to reveal any local cause for the hematuria. In searching for foci of infection the tonsils were found to be hypertrophied but did not appear badly infected. There was no discharge in the nose but x-ray showed dense blurring of each antrum. The sinuses were treated intensively for two weeks at which time they seemed to have cleared up, and the urine was normal. Since then he has had several mild attacks of sinusitis, but no more kidney trouble.

Case 9. A. L., a 4-year-old girl was seen in September, 1931. She had had a cold for several days when her left eye began to swell and the temperature rose rapidly to 104.5. When seen several hours later the left eye was entirely closed with considerable infection of the eyelids; the left cheek was swollen and the right eye beginning to swell. There was edema of the forehead extending to the hair line and the temperature was 105°. Hot applications and local vasoconstrictors to the nasal tissue brought about a gradual improvement so that in six days the temperature was not over 100° and the swelling had almost entirely disappeared. Conservative local treatment was persisted in for three weeks when it was apparent that more vigorous treatment would be necessary. X-ray taken at this time showed the right side clear, marked blurring of the left antrum and slight involvement of the left ethmoids. A window was made into the left antrum; following this there was rapid improvement. Three months later clinically she was well and the x-ray showed very little thickening of the sinus membrane. She has remained well.

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DISCUSSION ON PAPER OF DR. TAYLOR S. BURGESS

Dr. J. Allen Smith (Macon): I think this paper of Dr. Burgess' is instructive, particularly as to the ab-

sorptive features you get from sinuses. I notice that most of his pictures deal with the antrum, and I should like to on account of the absorptive phase of it, mention the ethmoidal sinuses.

While I was an intern in the New York Eye and Ear Hospital, some years back, Dr. George Dixon, who has been there for about 40 years, to my mind was one of the best x-ray men of sinuses I have ever had the privilege of knowing, and with his wonderful x-ray technic of sinuses, the ethmoids would show up the least pathologic changes of all the sinuses. It is easy enough, just as Dr. Burgess demonstrated, to show a cloudy antrum, but when it comes to the ethmoids one cannot be certain. In other words, you may have something there and you may not. So I think the ethmoids are the most sadly overlooked of all the sinuses, one reason being that the x-ray technic is faulty. I read recently that of all the sinuses the ethmoids and sphenoids give more absorption than any other in the head, and, unfortunately, most men in my line of work turn all their attention to the antrum.

In my short experience, a big per cent of the ethmoidal cases I see have been passed up, a lot of them thinking there is no sinus infection there. You may say, "How can you discover an ethmoidal infection?" At present I am using nasal suction, and find patients who transilluminate, the antra clear, and from transillumination the ethmoids appear to be clear; however, when suction is used, a very definite infection is found and a bloody purulent drainage is obtained from that region.

For the past two years I have been using autogenous vaccines and am greatly pleased with this therapy.

Dr. O. O. Watson (Macon): This subject has been thoroughly covered by Dr. Burgess in the beginning, and Dr. Smith has stressed the importance of the diagnosis of the ethmoid.

There is one point especially in chronic sinusitis that would be well to stress; that is, often you will find a chronic sinusitis which will not show up in the ordinary x-ray plate.

These pictures shown are fine, but frequently it is necessary to inject lipiodol in order to discover the chronic diseased sinus.

Dr. James J. Clark (Atlanta): Dr. Burgess has covered this subject very thoroughly, and I know that only lack of time prevented him from going more into the diagnosis and treatment of these conditions. I have been interested, with him, for several years, in the examination of children at the Eggleston Hospital in Atlanta. I think many men overlook the fact that children and babies have sinus disease just the same as adults; that is, they have a few ethmoid cells, and they have a right and left antrum. They do not have a frontal in infancy. That develops at between six and ten years of age. We have found in a large number of children definite sinus infection involving either the antra or the ethmoids. The technic of this examination, of course, is much more difficult than in adults. It is also more difficult to examine a child by any other means we have at hand. But with careful and efficient

x-ray studies, many of these children will show definite evidence of disease in the sinus which is responsible for a variety of complaints and symptoms.

You will notice that most of Dr. Burgess' films were films in a posterior-anterior projection of the skull.

Dr. Smith, in discussing the frequency of ethmoid infection, I believe is exactly right. In this day and age, particularly in the South, we have become accustomed to one x-ray film of the sinuses, a projection such as was shown in these lantern slides. In my opinion, and quoting Dr. Dixon of New York, with whom I am well acquainted, an examination of the sinuses is a study which requires considerable technical skill, particularly if you are going to study the ethmoids and the frontals and the sphenoids. And I do not believe that the ordinary, simple, what we call P-A film is of any great value except in eliminating antral and frontal infection. Certainly you cannot tell anything about the ethmoids. A lateral position and a different technic is needed to bring out the ethmoid cells.

One of the doctors discussed the fact that sometimes the x-ray examination is negative. That is seldom true when there is definite sinus disease, and x-ray films of good diagnostic quality are obtained. Certainly we do not use lipiodol often enough in the study of our sinus cases. The information obtained after injecting the antra or the frontals with lipiodol is truly remarkable. Lipiodol is an opaque oil and casts a shadow so that the inside of the antrum is seen just as the inside of the stomach is seen with barium. I should like to advocate the use of lipiodol, particularly in cases which are doubtful.

Dr. Taylor S. Burgess (Atlanta): I appreciate very much the discussion of this paper. In regard to Dr. Smith's remarks on the ethmoid, I agree with him to some extent, but I disagree with him in some respects. I do not believe that the ethmoid is as frequently involved as we are led to believe. I have seen much change in nasal mucosa, which I was taught meant ethmoiditis where we would find no ethmoid infection. I think a good many of these hyperplastic changes are due to allergy. I know many cases have postnasal discharge; but if you open the ethmoid cells they will not show any change.

I have developed a great respect for ethmoid infection. At the present time surgery is often unsatisfactory. A great many patients are operated on and do not get relief. In the last few years I have steered pretty clear of the ethmoid unless I find gross pus.

I think what Dr. Clark says in regard to the x-ray is perfectly right. I disagree with him on one thing. You read in the books that a great many sinus infections will not show in x-ray. My experience has been the reverse. In the cases in which I have gotten satisfactory results almost 100 per cent showed definite change in x-ray. I showed these slides to demonstrate the subject of x-ray diagnosis. Of course this is not a complete x-ray study, but this one position will give you a lead in almost all cases.

The next annual session of the Association will be held at the Forest Hills Hotel, Augusta, April 26-29, 1938.

MENOPAUSAL AND POST-MENOPAUSAL BLEEDING†*

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The purpose of this paper is to emphasize the significance of abnormal vaginal bleeding during and after the menopause, and to review briefly the nature and incidence of some of the common etiologic factors encountered at this time. Most women enter the period of ovarian decline and cease menstruating between 40 and 50 years of age, therefore, the group of cases referred to here includes only those in and beyond this age-period.

Many years ago it was recognized that women near or past the menopause were more susceptible to cancer; that those who menstruated regularly were exempt; and, that only in the beginning would such lesions admit cure. Experience has shown that cancer is most prevalent after the fourth decade of life; that one of its most frequent locations in women is the generative tract, of which abnormal bleeding in one form or another is the earliest and most important sign. Fortunately, experience has also shown that in many cases bleeding at this period of life is due to some benign pelvic lesion. Therefore, careful and prompt differentiation must be made.

In women with irregular bleeding the incidence of genital malignancy shows a remarkable increase with age. This is well illustrated by reports of large groups of cases in various age-periods. In 1,008 instances of bleeding at all ages, not including those related to pregnancy, Rongy and Tamis¹ found only 3.5 per cent due to malignancy. Among 2,000 patients over 40, Keene² reported a total of 27 per cent malignancy and in the premenopausal and postmenopausal groups, 14 per cent and 61 per cent respectively. In a group of 596 patients over 50 years of age with bleeding, Pemberton and Lockwood³ found 51 per cent due to malignant lesions. Other statistics^{4 5} conform closely to these figures.

Among all deaths from cancer in Georgia⁶ for 1934, 21 per cent, or one out of every five, involved the female genitalia; in women alone one out of every three was due to geni-

tal cancer. Recently, Campbell⁷ reported data on a large group of cancer patients treated in hospitals of Georgia in whom 42 per cent of all malignant lesions were found in the female genital organs. This difference of 21 per cent mortality and what might be an estimate of 42 per cent morbidity is due, no doubt, to the frequency and easy recognition of well developed cancer of the cervix and to the probability that a good number of the treated patients were cured or benefited.

In this era of cancer consciousness and health campaigns women are being taught important facts relating to the prevention and early recognition of this disease. Briefly these facts are: (1) the necessity of periodic examinations of women past 35 years of age, particularly those who have borne children; (2) that any unusual bleeding or discharge is abnormal and should always be investigated; (3) that the menopause is normally attended by a decrease of the menstrual flow and never by an increase in the quantity, duration or frequency; (4) that bleeding after the menopause demands immediate attention; and finally, (5) that early cancer is curable when properly treated. As a result of this timely warning an increasing number of patients will seek advice earlier than in former days and we shall expect increasing difficulty in making the distinction between benign and early malignant lesions.

From the standpoint of diagnosis the character of the bleeding is often suggestive of the type of lesion but is never conclusive evidence. A prolonged, profuse, periodic flow usually due to benign lesions, may be the first sign of malignancy in the fundus or adnexa. Likewise, irregular bleeding of any amount, before or after the menopause, strongly suggests cancer though frequently the causative lesion is benign. The presence of a thin, watery leukorrhea in addition to bleeding adds to the probability of malignancy.

A careful history, inspection, and palpation will reveal in many cases such obvious lesions as vaginitis, cervical polyp, myoma of the uterus, and adnexal inflammation. These present little difficulty in diagnosis. Nor will there be any great task in recognizing an advanced carcinoma of the vulva, cervix or adnexa. If no adequate cause for bleeding is

*Read before the Medical Association of Georgia. Macon, May 12, 1937.

visible or palpable, or in the presence of a seemingly benign lesion when age or symptom suggests a malignancy, additional procedures will then be necessary for diagnosis. A biopsy should be taken from any visible lesion which bleeds easily or is otherwise suspicious. The cervical canal and uterine cavity must be explored with a curet and a pelvic examination made under anesthesia if palpation has not been satisfactory. It is of utmost importance that all tissues removed be studied microscopically by a person well acquainted with the physiologic as well as the pathologic variations which occur in the female genital tract during the climacteric and postmenopausal periods.

Bleeding Due to Benign Lesions During Climacteric

Bleeding in women during the climacteric and prior to the menopause is due to benign lesions in a large majority of cases. The most frequent lesion found is the uterine myoma which can be dismissed with reference to two points. When a supracervical hysterectomy is contemplated for this and other benign lesions, the cervix in parous women requires careful examination and in most cases a cauterization; before the operation is completed the uterus should be opened and examined for a possible malignancy in the uterine wall or cavity.

Functional Bleeding. In about one-fourth of the patients with abnormal bleeding during the climacteric examination will reveal no evident pelvic abnormalities. This is the type usually referred to as functional bleeding for the reason that it indicates a disturbance in ovarian function and in turn an abnormal endometrial activity responsible for the bleeding. This may occur at any age during the reproductive life, is frequently seen in girls at or near puberty, but is most common in women between 35 and 50 years of age. The menopause may be delayed by this endocrine dysfunction.

A typical history would be that of a woman in her forties whose menstrual periods had been normal until recent months. Instead of the usual moderate flow of 4 to 5 days duration, bleeding was profuse, without pain, lasted 8 to 10 days and ceased. After an interval of 2 to 4 weeks profuse bleeding recurred and lasted several weeks. Examina-

tion revealed no obvious lesion in the vagina, cervix, fundus or adnexa. In such a case the distinction must be made between several possible causes, particularly an early abortion, submucous myoma, endometrial polyp, malignancy in the cervical canal or fundus, and functional uterine bleeding. An exact diagnosis can only be made by an exploratory curettage and microscopic examination of the tissue.

In the majority of cases the curettings reveal what is termed endometrial hyperplasia, a condition characteristic of the prolonged proliferative influence of the ovarian follicle hormone and the absence of the effect of the corpus luteum hormone. This dysfunction, according to Burch⁸ and others, may be primary in the ovary, or secondary to a disturbance in other endocrine glands, notably the pituitary and thyroid. In either case the developing follicles fail to rupture, ovulation does not occur and consequently there is no functioning corpus luteum. In a few cases, however, the endometrium appears normal in every detail, making it more difficult to explain the actual cause of the abnormal bleeding.

In hyperplasia the endometrium is quite thick, at times with formation of one or more polyps to which the misnomer "polypoid endometritis" was once applied. Under the microscope is seen a dense stroma separating glands which vary greatly in size. Due to the large dilated glands Novak⁹ termed this picture the "swiss cheese pattern." In true hyperplasia there is no evidence of secretory activity in the glands, nor is it similar to carcinoma.

The ovaries from such cases possess no recent corpora lutea, but often are the site of multiple, small, atretic follicle cysts. When the persistent estrogenic effect has existed for sufficient time the body of the uterus becomes symmetrically enlarged, one and one-half to twice normal size, and is quite firm. This uterine change so often spoken of as "fibrosis uteri," is merely a part of the effect of the endocrine dysfunction on the generative tract.

When the diagnosis has been made the ideal treatment for functional bleeding in women over 40 years of age is intrauterine application of radium or roentgen radiation sufficient to destroy ovarian function. Hor-

mone therapy has proved unsatisfactory in these cases near the menopause.

Bleeding Due to Benign Lesions After the Menopause

Postmenopausal bleeding is due to benign lesions in about 40 per cent of the cases and in the majority the lesion will be in the vagina or cervix. Following ovariectomy or the natural menopause there is a gradual process of atrophy of the entire genital tract. In the vagina and on the vaginal portion of the cervix, the previously well developed squamous epithelium becomes thin, and the cells lose their high glycogen content responsible for the acid reaction of the vagina since puberty. Consequently the resulting alkaline medium and the less resistant mucosa predispose to the common condition of senile vaginitis and cervicitis. Usually the existing flora of organisms assumes a mild though definite pathogenic rôle, although foreign and specific bacteria may be found.

In the early stages of senile vaginitis there is a diffuse inflammation with small superficial ulcers scattered over the vaginal walls. Bleeding is apt to occur, is often noted only after coitus or douches, but may be constant and associated with leukorrhea, severe vaginal pain, burning and itching. In all cases search should be made for the gonococcus, trichomonas, and fungi. It has been shown by Davis¹⁰ and others, that the ideal treatment for senile vaginitis is the administration of the estrogenic hormone hypodermically or in vaginal suppositories. As seen in treating infants with vaginitis,¹¹ the vaginal mucosa is responsive to this hormone, consequently within a period of 2 to 4 weeks the protective squamous epithelium and acid medium of the vagina are restored with prompt symptomatic improvement. Mild antiseptic acid douches may be used. If allowed to continue untreated the condition progresses to a chronic stage characterized by adhesions and at times almost complete obliteration of the vagina. Above such an obstruction may be found an hematometra or pyometra. To correct such deformities dilatation under anesthesia is made while the hormone therapy is administered. One should never be satisfied that senile vaginitis is the source of postmenopausal bleeding until all other possible causes are eliminated, particularly the malignant

ones in the cervix, fundus, adnexa and adjacent structures.

The benign mucous polyp of the cervix is a frequent cause of bleeding before and after the menopause. These are readily diagnosed. Only in rare instances do such polyps become malignant, although microscopic examination for this possibility should be made routinely. After removal the point of attachment is coagulated.

Instances of prolapse of the cervix and vaginal walls are sometimes accompanied by bleeding from ulcers. These are usually due to trophic disturbances or trauma and respond quickly to treatment; in case they do not, malignancy should be suspected.

It is well known that myomas of the uterus regress after radiation and the menopause. However, they may be a source of bleeding at this time if there are submucous nodules in which infection and necrosis are apt to occur.

Bleeding Due to Malignant Lesions

The important subject of malignancy as a cause of bleeding includes so many details that this discussion must be limited to a summary of the causes. Reference is made here only to the possible lesions encountered past middle life, but it is not intended to belittle the fact that malignancy does occur and must often be sought for in younger women. It is also evident that a malignant lesion is advanced when bleeding, the earliest sign of danger, makes its appearance. Therefore, our chief efforts are toward prevention and earlier recognition of malignant lesions.

During the climacteric and prior to the menopause irregular bleeding will be due to malignancy in one out of every seven patients and after the menopause in three out of every five. The majority of these lesions will be in the cervix. In doubtful cases the Schiller¹² iodine test is an aid in selecting parts of the cervix from which to remove tissues for study. With the application of Gram's iodine solution the normal squamous epithelium takes a deep brownish stain, whereas malignancy, leukoplakia, ulcer, eversion and scar tissue remain unstained. In using this test routinely, particularly in women who have borne children, we have means of selecting suspicious, limited areas which may reveal early cancerous lesions that otherwise might escape notice.

Malignant lesions in the body of the uterus are much more likely to be a cause of bleeding after the menopause than during the early climacteric age. Of these adenocarcinoma of the endometrium is by far the most prevalent. Sarcoma of the uterus, usually in a fibroid, may be primary in the endometrium or myometrium.

Within the past year reference has been made individually by Crossen¹³ and Novak¹⁴ to the possible predisposing influence of hyperplasia of the endometrium to adenocarcinoma of the fundus in patients with delayed menopause. They emphasize the fact that the erratic cell activity of the endometrium due to the persistent estrin stimulation might later assume the form of a malignancy. Cases are cited in which hyperplasia was known to be present several years before carcinoma of the endometrium was first noted, and in which both lesions were present at the same time. This relationship is mentioned here merely as a point worthy of future observation.

Ovarian cysts as well as solid tumors of the ovary frequently cause bleeding. When these lesions occur after 40 the incidence of malignancy is high. Bernstein¹⁵ reported 11 per cent of them malignant in women prior to 40 years of age and 58 per cent malignant when present during the climacteric or postmenopausal age.

In conclusion, I wish to refer briefly to one particular type of ovarian tumor which is characteristically associated with abnormal bleeding. This is the granulosa cell tumor, composed of cells capable of producing the estrogenic hormone and in turn true hyperplasia of the endometrium as well as other estrin effects upon the host. These tumors occur at all ages but are most common in women beyond middle age. When present during the reproductive age menorrhagia is often present; at times, however, periods of amenorrhea intervene. After the menopause, periodic bleeding is resumed which may simulate true menstruation.

A recent study by Novak and Brawner¹⁶ of a group of 36 cases revealed clinical evidence of malignancy in 28 per cent, a somewhat higher incidence than is generally considered for these tumors, but much lower than for solid ovarian tumors in general. The

finding of endometrial hyperplasia and a palpable ovarian tumor in a woman with postmenopausal bleeding strongly suggests the possibility of a granulosa cell tumor. Furthermore, since the treatment of these tumors is primarily surgical, one is justified in advising laparotomy in the absence of a palpable tumor when there is postmenopausal bleeding accompanied by a definite endometrial hyperplasia. One of the cases in this report was found in this manner. The tumor measured only one centimeter in diameter and was seen only after the ovaries were incised.

SUMMARY

Abnormal vaginal bleeding is of greater significance in women beyond forty years of age because of the greater prevalence of malignancy at this period of life. Fortunately, a benign lesion is often the cause of bleeding, therefore, careful and prompt differentiation must always be made. In our efforts to recognize cancer in its most curable stage greater difficulty is encountered in making the distinction between benign and early malignant changes. Microscopic examination of tissue is the only means by which this can be accomplished. Bleeding may result from benign or malignant lesions in any part of the generative tract. Frequently inspection and palpation reveal no evident cause. In such cases diagnostic curettage is imperative. Abnormal bleeding during the climacteric and prior to the menopause is due to malignancy in about one out of seven cases; after the menopause in about three out of five.

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DISCUSSION ON PAPER BY
DR. JAS. N. BRAWNER, JR.

Dr. G. Lombard Kelly (Augusta): Dr. Brawner has covered this subject so thoroughly it really leaves very little to be added. It occurs to me that one of the principal points for discussion is the differentiation between bleeding and menstruation. The laity usually considers any bleeding from the vagina as a form of menstruation.

I think preventive measures should be adopted of an educational nature, in order to educate the public to differentiate bleeding and menstruation.

I think Dr. Brawner's title was well selected.

There is a possibility of improvement with hormone therapy in functional bleeding. The synthetic preparations of certain hormones recently brought out, especially the two hormones of the ovary, the follicular hormone, which has been called by various names, the estrogenic hormone, or that one concerned with the production of estrus, and the hormone of the corpus luteum, which has been called progesterin, may prove helpful. Those are the two most important ones.

I believe that the improved knowledge of the interrelationships of the glands of internal secretion will make it possible in time to treat the functional bleeding with much more satisfaction by means of hormone therapy than it can be done at the present time.

Dr. Ralph H. Chaney (Augusta): This paper calls my attention to two things that one may well observe. In the first instance, there has been an increasing number of these post-climacteric bleeding cases which have not previously been properly diagnosed, apparently in some instances due to our neglect of diagnosis. I speak particularly of the granulosa cell tumors of which there are more and more being reported. In these instances, we have to realize that the tumor itself may be excessively small, it usually is unilateral, and it is always associated with a marked increase in theelin production.

These tumors, while common in early life, are particularly prone to develop after a cessation of bleeding. That is, after normal menstruation. In those instances, we find three or four years after the woman has ceased to menstruate normally, she starts to bleed for several periods, either excessively or perhaps in a rhythmic cycle. And in those instances there is an overproduction from the granulosa cells of theelin, and that overproduction of theelin, stimulating the ovarian function, in the absence of any ovule, causes a failure of production of the active principle of the corpus luteum. In those instances, the uterine mucosa shows a very marked hypertrophic character, and if in examining these women we have no local evidence, and we find a mucous membrane that is multiple, cystic in character, we must rule out the question of a granulosa cell

tumor, and it is in itself sufficient evidence for exploration if we can find no other source.

The essayist spoke of the Schiller test for determining local lesions of the cervix. There is just one caution I should like to emphasize, and it was brought to me by Dr. Schiller in his recent visit here, that there is a difference between the American Gram's iodine solution and the European Gram's iodine solution. Our American solution is approximately twice the strength of the common European solution. The Schiller solution should be made up of iodine 3 grams, potassium iodide 3 grams, and water 300 cc. This stains the cervix an even brown and any whitish area should be shaved off with a curet, and ask the pathologist to examine the juncture between the normal mucous membrane and the unstained light area.

Dr. Ed H. Greene (Atlanta): Due to the thoroughness with which Dr. Brawner discussed his subject I can add only emphasis to two facts that his paper brings to mind: Necessity of careful periodic pelvic examinations; and thorough cauterization, when indicated.

The figures that Dr. Brawner has brought us today show that women past menopause, with uterine bleeding, are found to be cancerous, in three out of five cases. This fact makes it imperative to urge upon women, as they grow older, the necessity of frequent routine examinations. Valuable information can be obtained by curettage and by biopsies. Examinations, particularly following delivery, to determine whether erosions or lacerations are present, and if they are found, to make a very careful cauterization, will probably prevent the development of a cancer in later life.

The value of a thorough cauterization as stressed by Dr. Brawner is inestimable. Upon examination, about three years ago of the records of 500 negro women at the Emory University division of Grady Hospital, I found that the women who had undergone supravaginal hysterectomies had had a thorough cauterization preceding each laparotomy. In no case over the period of investigation covering from 10 to 12 years had there appeared a malignancy developing in a retained cervical stump. That shows the value, in my opinion, of a thorough cauterization. When I say thorough, and as Dr. Brawner mentioned thorough, he means just that—not a superficial scarification with the cautery blade, but a thorough cauterization in order to destroy the glands thoroughly and clear up the erosions and the superficial laceration. If we will impress women with the necessity of frequent examinations, I believe the incidence of cancer will be materially reduced in the next ten years.

Dr. C. H. Richardson (Macon): This is such a voluminous subject and Dr. Brawner has covered it so completely that I think any general discussion of it is unnecessary. But there is one feature of pre- and postmenopausal bleeding that I wish to call your attention to—diffuse uterine fibrosis.

The uterus, as it approaches the menopause, tends to lose its muscle tissue and take on a fibrous nature. Frequently excessive bleeding in the menopause will occur and no pathologic gross entity can be discovered. There will be no fibroid tumor and no malignancy that

can be discovered by examination or curettage. Still the patient will bleed and will not respond to functional treatment. The uterus in this type of case is a little harder than normal, and is almost normal in size, possibly slightly enlarged. These cases respond very nicely to radiation or to operation. A sterilizing dose of radium or x-ray will end this trouble very nicely. The difficulty about that is, to my mind, that radium and x-ray act by destroying the ovary. Supravaginal hysterectomy, indicated in this condition, removes the offending organ, gets rid of the bleeding, and allows the woman to have her ovaries for possibly eighteen months to two years, to accommodate herself to the menopausal changes.

I think hysterectomy is possibly the better procedure for diffuse uterine fibrosis.

Dr. Gerry R. Holden (Jacksonville, Fla.): Dr. Brawner's paper is as nearly an encyclopedic paper as could be rendered in this space of time.

In discussion I would mention just a few points: First, the necessity for an accurate differential diagnosis when the cervix is normal in women past the menopause. As Dr. Brawner says, the majority of these cases are due to carcinoma of the fundus. It is not difficult to overlook a carcinoma of the fundus. I do not know why this should be, but frequently, even after a thorough curettage and a careful examination by the pathologist, we find later on that we have missed a carcinoma of the fundus. I have had that experience and I dare say others have had the same experience.

With regard to the treatment by radiation of these cases, to my mind it should be limited as a general rule to women at the time of the menopause or beyond it. Under 40, it is contraindicated unless for some reason supravaginal hysterectomy cannot be carried out. Between 40 and 45, I think it is a question to be decided in each individual case. Over 45, I believe the radiation treatment offers us by far the best and easiest method of taking care of these hemorrhage cases where all conditions are known.

Although the procedure is simple, it is one that should not be carried out without a careful consideration of the patient and a careful examination. We must rule out other lesions, especially chronic pelvic inflammatory disease. If this is done and our cases are carefully selected with due regard to age, I believe that radiotherapeutic treatment gives as good results as we can get with any therapeutic procedure. However great the value of radium in treating carcinoma, I do believe that it is of the greatest value in treating these functional hemorrhages of women at the time of the menopause.

If I might outline the type of case for which such treatment is best adapted, it possibly would be about like this: A woman at the time of the menopause, whose periods formerly were normal but in the last few years have been more and more profuse until finally she is bleeding probably a greater part of the time. On examination we find that she is a multipara, the cervix is normal; the fundus is somewhat enlarged, not excessively so, and it is rather soft. The tubes and ovaries are normal. In such a patient we

expect relief in 95 per cent of the cases treated

Endocrine therapy is of value in young women. I have found it of very little value in women at the time of the menopause.

Dr. James N. Brawner, Jr. (Atlanta): I am particularly grateful for the liberal discussion offered upon this subject. I realize fully the vastness of the details which enter into the cause of bleeding during and after the menopause. It is rather difficult to cover every detail in such a brief period of time.

I am glad that Dr. Chaney mentioned the granulosa cell tumor of the ovary as one of the very important lesions which we must be on the lookout for as a cause of bleeding at any period of life, particularly near the menopause and after the menopause. These tumors also occur in young girls prior to puberty and are characteristically associated with precocious menstruation, we may say, although it is not true menstruation.

I agree with Dr. Kelly in that it is difficult for women to recognize the difference between true menstruation and abnormal bleeding. As a matter of fact, I think it is difficult for us to recognize the true character of bleeding which may be periodic, perfectly regular, probably lasting no more than the usual length of time, but still not associated with the sequence of the hormone effects as we recognize with normal menstruation. No doubt some of the women approaching the menopausal age menstruate perfectly regularly and normally. However, if the endometrium is examined just prior to a menstrual period there is often a total absence of the usual secretory effects which we find preceding true menstruation.

Dr. Greene emphasized thorough cauterization of the cervix. Frequently this can be done in the office without an anesthetic, but patients differ so much in their sensibility to pain from the heat of the cautery that some require an anesthetic.

Dr. Richardson mentioned the question of the choice between radium, x-ray and operation in treating functional bleeding. Dr. Holden very ably answered this question, and I thoroughly agree with him. We have to choose treatment for individual cases, first remembering that we must conserve ovarian function in young women. In these patients operation is certainly the procedure of choice. After forty years of age, we must decide for each individual case, but x-ray or radium at this age is most useful. Some women are predisposed to unusual nervousness or apprehension, giving one a clew as to a possible stormy menopause if radium or x-ray is used. In those cases I think operation might be the procedure of choice. If the individual seems to be rather stable and definitely near the menopausal age, or if there is contraindication to operation, radium and x-ray are certainly the procedures to be used.

The Washington State Medical Association at its last annual session adopted resolutions in which it condemned any plan which might be promulgated by the federal government to direct and supervise medical care for the indigent and insisted that such service should be under the direct supervision of local medical societies.

THE PHYSICIAN'S POLITICAL OBLIGATION*

THOMAS CHASON, M.D.
Donalsonville

At the outset I may state that I am a State Senator from the 8th Senatorial district of Georgia, in which capacity I served in the 1937 State Senate, and from my observations and contacts while serving in the Senate I am hereafter recording my impressions in such capacity.

It is with some reluctance and temerity that I present the facts as I observed them while in the Senate: First, because of my commitments to our present Democratic program; second, because of senatorial courtesy, and as a member of a number of committees and especially as chairman of the Committee on Hygiene and Sanitation.

One serving on these committees is more or less committed to secrecy touching their deliberations; however, I feel impelled as a member of organized medicine to give such information as I may have obtained while serving as Senator to my profession that we may in the future avoid the many humiliations that we who labored so hard in our common interests were subjected to.

Medicine has more sides than a strictly scientific one. While medicine has a high duty to the public, the public in return has a duty to medicine. The public is continually clamoring for free service or minimum paid service to the regular medical profession, and in many instances the doctor's only recompense is ingratitude. Medicine has its economic as well as its strictly professional side; therefore, it behooves every physician in Georgia to get under the wings and protection of organized medicine, which by serving in every way possible he serves his own interests and that of the public best.

When I first entered the Senate, I did so absolutely without any political experience of any kind, and early in the session it became my duty and pleasure to try to handle all medical and public health bills. The first bill I introduced for the medical profession was a basic science bill. It was referred to the Committee on Hygiene and Sanitation, of

which committee I was chairman. At the first hearing of this bill by the committee, I found it thoroughly packed against the bill. The chiropractors were present in large numbers and from all over the State; letters, telegrams and post cards poured in upon this committee. Each Senator's desk was loaded with literature opposing the bill. From one town in the State I received more than eighty telegrams, post cards and other literature opposing the passage of the basic science bill. The chiropractors and other cults had made it appear to the people that the passage of this bill would disqualify every chiropractor, osteopath, and other cults in the State. Even the Christian Scientists were there in opposition to the bill. It was my information that they had collected quite a fund to assist them in opposing this bill. The result was that they had created an opposition so great that it was impossible to get a favorable consideration of the bill before the committee. I therefore took it to the floor of the Senate on a minority report. When it came up for passage it was obvious to me that if I pressed passage it would be overwhelmingly defeated. I therefore tabled the bill where I presume it now rests in peace out of the way of the rabid opposition and scurrilous attacks of many senators from all over the State whom, I am sure, represent themselves in their home districts to the physicians as being friends of the medical profession.

Here and now I want to implore and entreat every physician in Georgia to refuse to be misled by any statement from any politician from the governor down, by the general statement that he is a friend of the medical profession. Instead, obtain from the legislative committee of our Association, a program of legislation as outlined by them and which is in the interest of not only the physicians of the State but the public in general, and after explaining to these politicians and office-seekers the benefits of these proposed laws, commit them to support these laws and, on refusal, refuse to vote for them or lend them your influence in obtaining office. But, contrary, go to the people you serve and educate them in the desirability of these laws which are in their interest; after which use your influence to defeat any man whose political attitude seems inimical to your own and the people's interest. Don't let self-interest,

*Read before the Medical Association of Georgia, Macon, May 12, 1937.

friendship, or anything interfere with your high purpose in serving the best interests of our profession and the people in general; (be diplomatic and a professional politician).

Then, further, when these laws are brought up for enactment by our legislative body, do not leave the burden on our legislative committee and a few senators and representatives who try hard to work for the enactment of such laws as our profession may present. Any doctor doing less than the things suggested above cannot, as I see it, be true to himself, his profession, or his State.

In regard to the defeat of our bill there are always a few legislators who can be influenced by money. Now, it is necessary that we do all we can to educate the public and use them in favor of such legislation as we may put forward.

We were fortunate, however, in defeating the naturopath bill. They got a favorable report from the Committee on the State of the Republic to which committee their bill was referred by the president of the senate. However, I think, it was only a friendly gesture and you may be sure it will be back at the next session of the legislature.

The brazen affrontery of these cults is amazing. They asserted before committees that they would never cease their fight for recognition till they had representation on the State Board of Health and in eleemosynary institutions.

One prominent senator told me that he very much desired to have one or two chiropractors on the staff of the Milledgeville State Hospital. So you see what we are going to have to face in the future.

I would, therefore, suggest to you that we raise by popular subscription in this body a sum sufficient to establish a Public Relations Bureau (since I wrote this paper I understand the House of Delegates has decreed a Public Relations Bureau) to keep the press informed so the public may know our aims and objectives, and also to supply our legislative committee with enough money to wage an aggressive fight before the legislature to get our bills enacted and to keep bad legislation, especially bills against our interests and, incidentally, against the interests of the public from being enacted.

I want to request every member of our Association that can possibly do it to con-

tribute \$25.00 to the legislative committee yearly for a period of 5 years for the purposes enumerated. I cannot close this paper without paying sincere tribute to our legislative committee and many fine outstanding doctors in Atlanta and other parts of Georgia for their faithful work and encouragement in this fight. Without them I think I would have faltered. Their association was to me like an oasis in a desert.

A further sacrifice I want to request of you: that you stand for office in all cases where you can afford it and think that you can serve your people and your profession well.

DISCUSSION ON PAPER OF DR. THOMAS CHASON

Dr. C. C. Aven (Atlanta): Someone has said that a man to be a success must be a good man, a good husband, a good father, a good doctor and a good citizen. Good citizenship has as one requisite your obligation to the profession and to the public, and that is a political obligation in the fact that you should support such measures and such things as will be conducive to better health and better doctors.

The lawyers in this state have already taken under their supervision a Public Relations Bureau and set up a department for the state bar association to do the very thing that our state Public Relations Bureau is intended to do. Some of the things that I wish to mention just briefly are these:

There are several states now operating public relations bureaus. I will not have time in this discussion to enumerate all of the things, but they are getting these funds by public subscription.

Some of the timely topics that have been suggested for newspaper releases are: the Oath of Hippocrates, Political Activity, Public Truth as Related to Physicians, Do We Want Security, Is Our Profession to be Trusted, Why Am I a Doctor, The Best Way to Choose a Doctor, My Idea of the Best Doctor, and so on.

The inauguration of a speakers' service has been carried on in New York state to a great advantage, they are getting up material and assimilating data that will be given out to their speakers who speak to all kinds of public meetings. These releases go to such places as to editors of daily and weekly newspapers; they go to such key people as preachers, labor leaders, mayors, legislators, and senators. And that is the thing that I want to see this Association do.

Dr. Shanks and my committee have been particularly interested in carrying on this program, not only to educate the doctors but to educate the legislators and the public as a whole. We have had printed some cards that we wish to have all of you that are interested and will, take advantage of. And, fellows, if you do not do this I tell you that you are up against something that is going to be serious. We must fight state medicine and many other things, and if we do

not band ourselves together and raise some money to educate the public, we are sitting in a serious position.

I stood on the outside this morning and solicited a few cards, and I want to tell you that the essayist contributed \$125; Dr. L. C. Fischer of Atlanta stated he would give us a check for \$100, Dr. Cleve Thompson of Millen has given us \$100; Dr. Sauls, T. C. Davison, Frank Boland, and several others have given us \$100, and a good many have subscribed \$50. This is to be paid over a period of five years, beginning in October of this year.

The House of Delegates last night set up the necessary legal procedure for the formation of this bureau, to be composed of the President, President-elect, Chairman of the Public Policy and Legislation Committee, Chairman of the Council, and the Secretary-Treasurer, and the Advisory Committee to be composed of the Councilors and chairmen of all standing committees.

Fellows, I think it is time now for us to rise up and support our organization, and it is necessary to have some money to carry on this program. I am going to leave with you some cards. I want you to talk this over with your fellow doctors and interest yourselves in it and see if we cannot raise enough money to set up this Public Relations Bureau this fall and start an educational program that will be worth while.

Dr. Thomas Chason (Donalsonville): There is nothing that I want to say other than to say that I do not think there was ever a time in the history of our Association that we needed this more than we do at this period of time. As Dr. Aven says, we must fight state medicine and cults; we have many, many things to do. When I was young, before I went to the State Senate, I thought everything was well and fair and going along well for the profession, but when I got up there I was very much disillusioned. I believe that, of the legislators, there are 50 per cent that are not as friendly as you may think they are.

I think we should all commit ourselves definitely to the program as set out for our profession and organized medicine in this State, and under no circumstances give our support to anyone seeking office until they agree to support us. I think the great trouble is that we need education. We need that very clearly. The chiropractors, I understood, raised a sum of \$6,000. There are only about 200 of them, and there are 2,700 of us. You don't know what an unequal fight it is, when the men at home are not doing the work. Many men that I contacted there said, "What did your doctors say?" They didn't say anything. A lot of us are cowards because we are afraid of some politicians' influence. We must nerve ourselves and be braver men if we would be true citizens and good doctors.

The American Board of Obstetrics and Gynecology will conduct its next written examinations and review of case histories of Group B applicants in various cities in the United States and Canada on Saturday, November 6, 1937. For further information write Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

HUMAN STERILIZATION*

AVARY M. DIMMOCK, M.D.
Atlanta

Strong, intelligent, useful families in the United States are becoming smaller. Irresponsible, diseased and defective parents do not limit their families. Families who have to send children to an institution for the feeble-minded are on the average twice as large as those who send their children to universities. What is the cause of this state of human affairs and what is the remedy? Such a program, if continued, can lead to but one result: *race degeneration*. The law of race-preservation is as vital to a nation as self-preservation is to an individual.

Human sterilization and birth control should not be confused. There is a wide difference between the two. Birth control as used today is practiced most by the people who should be using it the least; the contrary is equally true. Both human sterilization and birth control, in my opinion, have a place in modern society; both demand careful consideration, but they apply to different classes of people for different reasons.

Human sterilization is intended for men and women who are so seriously defective that, for the protection of themselves, their families, society and posterity, they should not bear and rear children. The procedure involved is not new, for it has been practiced for many years; yet there is still a lack of proper knowledge regarding the subject even among well informed people. At the present time the subject is being considered and discussed in increasing numbers of articles in newspapers and magazines. These articles, while serving a useful purpose, are not just the things to educate the people. Here is where the medical profession comes in! It is our duty to inform the people what human sterilization is, when and where it is indicated, how it is accomplished, under what circumstances it is advised, and what is to be expected by the individual after he or she is sterilized. We must show them that sterilization is not castration.

Is there really a need for human sterilization? Everyone today is impressed with the gradual but constant increase of the tax bur-

den. Everyone is familiar with the number and magnitude of the crimes which are committed throughout the country. We are all aware of the fact that the great majority of criminals who escape from prisons, and a number who, when released for one reason or another, again commit crime and are hunted down. Surely some of these criminals are fit subjects for sterilization. Should all of them be allowed to go on producing their kind? I think not.

Careful studies indicate that there are 6,000,000 people in the United States who have been, are now, or at some time, will be declared insane and committed to state institutions. There are another 6,000,000 who suffer from mental disease, sufficient at some time to incapacitate them for work, but who are never legally declared insane. This is about 10 per cent of the entire population of our country and does not take into consideration those people who are so deficient in intellect that many of them are classed as feeble-minded.

This is the situation in America today. The economic burden is tremendous and it will continue to grow worse unless active steps are taken to correct the deplorable situation.

In an editorial which appeared in the *Atlanta Constitution* Aug. 15, 1935, the following was stated: "With proper legislative safeguards, there can be but little reasonable objection to the growing custom of rendering the mentally, physically unfit, incapable of reproducing the species. The same applies to the habitual criminal. The mentally sound individual seldom mates with the individual who is lacking in mental capacity; the physical derelicts of the human race are usually devoid of a sense of responsibility, and the habitual criminal desires one of his ilk." It then cites a case of a Denver woman whom the court tried to persuade in 1921 to be sterilized. At that time she had seven children. She refused aid. Subsequently the court took five of her children who were born later, ruling that the parents were unfit to have custody. Similar examples throughout this country are numerous.

In time of war the United States calls on the fittest of its citizens to sacrifice their all, even their lives, for the common good. In

time of peace shall our country not be able to call on some of the most unfit of its citizens to renunciate their rights, if indeed they have the right, of parenthood?

Up to Jan. 1, 1936, the eugenic sterilizations performed in state institutions, under state laws, amounted to 23,166. Approximately 10,000 of the patients were males and 13,000 were females. Compare this with the fact that in Germany 56,000 people underwent the operation in one year. We, the doctors of this country, cannot sit by and do nothing. While it is true that nature does sterilize a number of the unfit it is equally true that she cannot be depended upon to remedy the situation; we must do it.

What kind of a government can we expect in the future if the people who should, and could be sterilized, are allowed to go on multiplying to an unlimited degree? What kind of laws are we to expect, when the number of voters from this stratum of society outnumber the voters of the higher groups? What predicament will medicine find itself in?

Medicine has made wonderful strides; newspapers are full of the accomplishments of present day surgery. In the not distant future certain common diseases of today will doubtless be medical rarities. The field of human sterilization has not been scratched, at least in America. In 1934 twenty-seven states had eugenic sterilization laws. But many of the states are not taking advantage of the law. This is due, no doubt, to a lack of education of the public as to the need of such a measure. It is a pertinent fact that the procedure is most popular with those most familiar with it, and practically the only criticism of the method has come from those not qualified to render an opinion.

As to the legality of the law, it has been upheld by the Supreme Court of the United States, in a case appealed from Virginia. In this case it was shown that the plaintiff was a feeble-minded woman, the daughter of a feeble-minded woman, and she had had a feeble-minded, illegitimate child. The decision was written by Oliver Wendell Holmes and he said: "Three generations of imbeciles are enough."

It is easy for one to assume that sterilization would lead to an increase in sex offenses

and more venereal disease. Such is not the facts; it is because of better health, better discipline and education, and supervision of these people. In California it was shown that of 304 feeble-minded girls sterilized and paroled, 9 out of 12 had been sex offenders before commitment. After sterilization, only 1 of 12 became sex delinquent on parole.

Marriage after sterilization has no objections; in fact, it is to be desired in many instances. It promotes stabilization of the feeble-minded girls, and they can get along with a little help and supervision if they do not have the responsibility of children. The husband and wife both can work and support themselves, even though each is inefficient economically. Had the wife borne a number of children, the earnings of the husband would have been inadequate to support the family and sometime in the future the public would have to care for them.

While it is essential to have sterilization laws, it is nevertheless true that many people who come in the class of "should be sterilized" do so voluntarily. They have learned of the advantages of such procedure. We are to be congratulated that there is now a law in our State which permits sterilization of certain people. It is to be earnestly hoped that Georgia will take advantage of this law and derive from it the great benefits it is capable of giving. While sterilization is not a panacea, it certainly is one of the most important among a number of measures in any far-sighted and humanitarian program, for dealing with society's tremendous burden of mental disease, deficiency and dependency.

HOWARD K. GRAY and JAMES W. KERNOHAN, Rochester, Minn. (*Journal A. M. A.*, May 1, 1937), encountered a case in which malignant lesions developed in the ectopic gastric mucosa of a Meckel's diverticulum. The diverticulum was removed while the carcinoma was sufficiently small, permitting them to observe the origin of the carcinoma from the heterotopic gastric mucosa. The portion of the heterotopic tissue that had not been replaced by carcinoma was typical of gastric mucosa. There was chronic diffuse inflammation throughout the mucosa and the epithelium was hyperplastic, while the glands were tortuous and irregular. The hyperplastic appearance suggested a precancerous condition, which is often seen in cases of chronic gastritis. Ulceration and infection of the carcinoma had occurred and the tumor had grown through the muscularis mucosae but had not extended to the peritoneum. The patient recovered and was living one year after removal of the tumor, and there was no evidence of metastasis.

THE NECESSITY FOR DEVELOPING BETTER HOME CARE FOR TUBERCULOSIS PATIENTS*

H. C. SCHENCK, M.D.†

Atlanta

Nearly seven years ago the State Health Department, aware of the fact that there were in the State literally thousands of persons having tuberculosis who could hope for little in the way of treatment or care, launched a field tuberculosis service. Its purpose then, as it is now, was to assist physicians in the early discovery of tuberculosis, to have placed under the supervision of the family physician those found to have this disease and to help locate, isolate and close the sources of infection. The plan was endorsed by the medical profession of the State and material assistance was rendered by the Georgia Tuberculosis Association, Phi Mu Sorority and other agencies.

It was recognized at the outset that there were many difficulties to be overcome before tuberculosis could be brought under effectual control, but they were not believed to be insurmountable. After six years of effort the State death rate has been decreased about 23 per cent, but most of this decrease occurred in the early years of this service, the reduction in the past three years being steady but comparatively slight. The difficulties which we anticipated we found, but we have never felt whipped in the struggle against this still terrible plague—a plague that kills over 1,700 persons annually in Georgia. The fact is we have learned that our methods are sound and that to finally wipe out this enemy we need to employ against it everything which experience has shown of value and of necessity.

A little study of the problem is illuminating. It is generally accepted that there are five active cases of tuberculosis for every recorded death. This would mean that we have better than 8,500 persons needing care. There are less than 700 beds for tuberculosis in the State, 343 of these being at Alto and the majority of the remainder in Atlanta which does not have enough beds to supply its own needs. That we need at least 1,000 more beds, which for many good reasons should be made

*Read before the Georgia Public Health Association, Atlanta, April 22, 1937.

†Chief, Division of Tuberculosis Control, Georgia Department of Public Health, Atlanta.

available in, say nine district sanatoriums, cannot be disputed. It is reasonable to plan for 1,000 more sanatorium beds, but many more than this can hardly be expected. If we had them, we would have a total of 1,700 beds for 8,500 patients. Even with such enlarged sanatorium facilities there would still remain the necessity for developing adequate home care for thousands of patients. How much greater, then, is the necessity for developing such home care now when we have so few beds.

There is still, in spite of our years of preaching, a tendency to wait interminably after a diagnosis of tuberculosis is made for the patient to be admitted to the sanatorium, doing nothing, while waiting, to cure him, or to prevent him from further disseminating infection. Often while waiting for admission to the sanatorium the disease has advanced to such an extent that nothing can be done and quite commonly patients with a fair chance to recover when properly treated die before their names can be reached on the long sanatorium waiting list. There seems to be an impression among many, physicians as well as laymen, that there is not much that can be done except to get the patient to the sanatorium, if only for a few months to receive instruction about how to live. It is admitted that the sanatorium is an ideal place to keep a patient until he gets well, is entirely rehabilitated, or, if he doesn't get well, as long as he may live. But it has been shown that this is impossible. Why cannot all persons with tuberculosis be instructed by local physicians, by public health doctors and nurses and through literature in particular and general things they must do if they wish to get well? Why wait, why waste precious time when life itself is at stake?

Many persons with early tuberculosis would recover in a comparatively short time without ever going to a sanatorium if they were put to bed at home, each placed under the care of a sympathetic and informed family physician and properly instructed and guided by him. There are economic conditions for this not being done in every case at present, but there is no good reason for permitting these conditions to continue.

Even though patients may be admitted to the sanatorium, usually they may be kept in

the institution only long enough to have performed certain collapse measures which may be of very great benefit to them. After discharge from the sanatorium there is usually necessity for maintaining home care for a long time and, if it is not provided, relapse usually occurs and the expense of sanatorium treatment will have been wasted.

Having so few beds it would be wise when a person has been found to have tuberculosis to think first of all of the immediate necessity of providing strict bed care for him as long as may be required and of getting him to the sanatorium later. As stated above, in many instances actual cure would result; in others, improvement. The greater the number of patients that may be cured at home, the less demand there would be on the sanatorium and the less demand on the sanatorium for such cases, the more would the collapse measures, which usually can only be obtained in such institutions, be made available for those that would require them, so that they, too, could have a better opportunity to get well. Having had this service rendered, these patients returning to their homes may continue their treatment (rest) as before until they finally arrest their disease.

That there are many factors hindering effectual home care, or care in the community, of people who have tuberculosis is well known, but they are factors not nearly so difficult to overcome as the single one (lack of beds) which prohibits sanatorium care. In the majority of cases assistance of some sort is required. Each case in this class will present a special individual or family problem. No one can go to bed for an indefinite time unless a way is provided for him to live without work for the time required. Often an entire family in which there is a case of tuberculosis is involved in the problem, for there is no use to advise patients to go to bed when they know the family will suffer as a consequence.

The agencies best adapted to meet the problems involved in establishing adequate home care in most of these cases are county or municipal public health units in cooperation with local welfare agencies. Good social workers financed properly could establish, in most instances, satisfactory arrangements so that adequate bed care might be secured. They could also arrange for the necessary medical service.

A most potent force in establishing adequate home treatment for many of the cases will be the public health nurse. If she is well informed she will be of the greatest value to the patient, for she can convey to him the advice of the physician and his instructions and show him how to carry them out and impress upon him and his family the necessity of following such advice and instruction implicitly. She can maintain a close and continuous supervision for the physician over the patient, for little can be expected from treatment unless close, interested, intelligent and sympathetic supervision is maintained.

Public health and welfare agencies, together with local tuberculosis associations and committees, civic clubs, fraternal societies, churches and public spirited and health-minded individuals, in most instances, could provide some sort of local means so that not a single person with tuberculosis need go without the prime essentials for a cure. These are, first of all, rest in bed twenty-four hours every day as long as may be necessary and a well balanced food supply. No one can be cured by milk and eggs, and cod liver oil and air and, least of all, by sunshine. Complete rest, mentally and physically, for the patient should always be the first thought and the sooner it may be applied in a case of tuberculosis the better will be the chance for recovery. Often, in providing rest for indigent patients, it will be found necessary to furnish for them portable cottages. The advisability of providing beds at county farms for the same class of patients should be seriously considered, for this would be a cheap and effective way of providing rest, care and food for them. Other methods to solve these problems will suggest themselves to public health and social workers.

Conclusions

1. Since bed care is the prime requisite in the treatment of tuberculosis and results in cure when properly established and since it cannot be obtained in the sanatorium except by comparatively few patients, the establishment of adequate home care for every tuberculosis patient is an absolute necessity.

2. With the development of home care the sanatorium could use its all too few beds for the services it is particularly adapted for—establishing lung collapse in the cases for

which it is indicated—and a more rapid sanatorium turnover would result enabling many more people to receive the advantages of these measures they otherwise could never obtain.

3. Better home treatment can be afforded through the cooperation and effort of the family physician, social workers, public health officers and nurses and other local agencies.

UNFAVORABLE REACTION FROM SODIUM MORRHUATE

MILFORD B. HATCHER, M.D.

HAROLD W. LONG, M.D.

Augusta

In view of the fact that sodium morrhuate is widely used in the injection treatment of varicose veins and so few untoward reactions have been reported from its use, we feel that the following case is worthy of report.

A white male, aged 61, was seen at the University Hospital Clinic. He had varicose veins in both legs and chronic ulcers of his lower right leg. Beginning in Nov., 1936, he had received several injections of the varicosities while in Greenville, S. C. He was uncertain as to the medicament used and gave no history of ever having a reaction from the treatment, but subsequently, by correspondence with the surgeon in Greenville, it was learned that the injections were of sodium morrhuate and that following one of his injections he had had an attack similar to the one here described. It was also learned that he had a positive blood Wassermann and Kahn (negative C.S.F.) and had received some antisyphilitic treatment.

With the patient in the supine position a tourniquet was applied some three inches above the right knee and a second one just above the ankle. A large tortuous vein on the calf of the leg was chosen and venapuncture performed, after which the proximal tourniquet was released and the leg elevated to empty the vein. The tourniquet was then reapplied and the injection of 5 per cent sodium morrhuate begun, the introduction being very slow. While the fluid was being injected, after about 4 cc. had been given and before either tourniquet had been released, the patient began to complain of a generalized burning sensation, he sat up on the table and began vomiting. The injection was immediately stopped. He vomited repeatedly and began to sweat profusely. The radial pulse was almost imperceptible, with a rate of about 60 per minute, the heart sounds were barely audible, and the B.P. 0/0. The patient's face became slightly cyanotic, although it had been flushed and very red when he first complained of the burning sensation. He was given 8 minims of adrenalin (1:1000) and 7½ grains of caffein sodium-benzoate and was placed in the anti-shock position. As soon as possible he was given 250 cc. of 10 per cent glucose and 250 cc. of normal saline intravenously. His condition improved slightly and, about 30 minutes after the onset, his radial pulse be-

came palpable and the blood pressure had risen to 30/0. Shortly afterwards he made an effort to sit up and began to complain of severe pains in his right shoulder and inability to move his right arm. Within an hour he was greatly improved, having a pulse of 110, and B.P. 98/60, and was removed to the hospital.

On admission to the hospital he was given an additional 250 cc. of normal saline and $\frac{1}{4}$ grain of morphine sulphate, the anti-shock position being maintained. He still complained of severe pain in his right shoulder and paralysis of the right arm. This pain abated somewhat after the morphine was given but the blood pressure dropped to 80/50 after about 15 minutes. He was given $7\frac{1}{2}$ grains of caffeine sodium-benzoate and, since he complained of being very cold, external heat was applied. Some four hours after admission to the hospital the paralysis of his arm disappeared and the systolic blood pressure was about 100. The patient now stated that he felt perfectly normal. He experienced no further trouble during his hospital stay of 24 hours.

VASCULAR SYPHILIS

SHELTON P. SANFORD, M.D.
Savannah

The newer concept of syphilitic myocarditis is due largely to the painstaking researches of the late Dr. A. S. Warthin. He calculated that sudden death due to myocardial failure is five times as frequent in latent syphilitics as in non-syphilitic persons.

The charge of overemphasis has been made by those who rely chiefly on gross demonstrable pathology. However, time has begun to show that the microscopic evidence of the destructive activities of the spirochetes must be emphasized. Especially is this true if the disease is to be attacked while a "cure" or at least an arrest of the process is still possible.

In early syphilis a true septicemia exists. The symptoms are those of a systemic infection and the spirochetes can be demonstrated in all the organs. It is during this phase that the therapeutic effects of the arsphenamines are most effective. In the early stages of the disease the causative organism may also be demonstrated in large numbers in the myocardium, without the destruction of tissue and the infiltration by leukocytes and plasma cells. This is strikingly demonstrated in the stillborn syphilitic. In later stages the number of spirochetes diminish while the tissue reaction increases. The absence of tissue reaction to the presence of the ubiquitous spiro-

chetes explains in part the failure of Turner and White to find evidence of myocardial damage in secondary syphilis.

In the first stages certain organs may be bearing the brunt of the attack. Just as the onset of jaundice or an enlarged liver would indicate a hepatitis, the onset of feeble, distant heart sounds—often associated with attacks of syncope—would suggest myocardial damage of considerable severity. In the later stages patients are apt to complain of vague precordial distress, a burning sensation over the precordium. A persistent mild degree of cyanosis and repeated mild anginoid attacks are also suggestive symptoms of heart involvement. These signs and symptoms appearing in known syphilitics are certainly ominous and not to be taken lightly.

During the late stages of the disease our attention is occupied by the local process of end results. In the case of cardio-vascular syphilis the three most common lesions are aortic regurgitation, aneurysm, and simple aortitis. These processes cause such serious interference with the normal physiology that attention has been diverted from the invasion of tissues, which do not show gross disease. It has been repeatedly demonstrated that the myocardium, though apparently normal to gross inspection, often shows microscopic evidence of disease. Although an aneurysm of the aorta may be the immediate cause of death, a true myocardial syphilis may also be present.

In addition to the microscopic evidence there is now the added evidence of myocardial damage shown by abnormal electrocardiograms. Such abnormalities as delayed conduction time, prolonged and bizarre shaped QRS complexes, bundle branch block, and abnormalities of the T waves are much more frequent in cardio-vascular syphilis than in comparable groups of rheumatic, hypertensive, or arteriosclerotic heart disease.

It has been demonstrated that for every case of aortitis and its complications, there are nine symptomless cases in the so-called latent period. This means that the signs and symptoms of ninety per cent are below the threshold of perception for both the physician and patient.

In the newer microscopic pathology the terms primary, secondary, latent and tertiary syphilis lose some of their significance. It

would seem that the term latent syphilis has outlived its usefulness. There is no respite as far as the destructive activity of the spirochetes is concerned. Quietly and unnoticed the muscular element of the heart and aorta are being destroyed and replaced by fibrous tissue. The process too often continues unnoticed until some late severe lesion renders the patient a hopeless victim. Efforts should be made to bring these latent cases above the threshold of perception.

It is probable that the patient with latent syphilis is really not symptom free. The symptoms have developed so insidiously and have been endured so long that they are accepted as normal. This form of adaptation is seen in other diseases.

In addition to the three common types there remain a less numerous group of syphilitics who, without hypertension, and without valve lesions, develop congestive failure. This group was a great puzzle until electrocardiographic studies showed them to be cases of bundle branch block. This was often merely one manifestation of a diffuse syphilitic myocarditis.

Clear-cut cases of aortic syphilis are easily recognized in young subjects at necropsy. In the fourth and fifth decades a coexistent arteriosclerosis with its calcified plaques often obscures the primary cause.

While Levine assigns syphilis a minor rôle in the production of coronary sclerosis, Warthin's figures show that angina pectoris, myocardial infarction and coronary thrombosis are more frequent in syphilitic than in non-syphilitic subjects. Here again it is difficult to separate true syphilitic disease from those cases where arteriosclerosis is superimposed.

It is difficult to avoid the conclusion that the ravages of syphilis are so widespread that the process simulates old age. It is not unusual to see a victim of latent syphilis suffering from precocious senility so that a man of forty-five may appear older than a non-syphilitic of sixty.

As matters now stand the conservative attitude would be to regard all cases of syphilis potentially cardio-vascular. To keep in mind that lack of symptoms is no evidence of lack of activity. Minor changes in functional tests must not be taken lightly.

The early signs of aortitis are accentuated aortic second sound, a palpable pulsation above the manubrium and an elevation in blood pressure without an increase in pulse pressure. To these must be added persistent changes in the electrocardiogram. These signs should be carefully sought for in all routine physical examinations, especially in treated cases of syphilis. It is only by the recognition of these signs in the symptom free cases that the hopeless complications of the disease can be rendered less frequent.

CRAWFORD W. LONG MEMORIAL*

W. D. GHOLSTON, M.D.
Danielsville

I esteem it a high privilege to participate in the exercises here today. You and I have met to pay tribute to one of the greatest physicians of all time. A thrill of genuine admiration and pride passes through our hearts as we pay homage to one of Madison county's own sons—Dr. Crawford W. Long. I want to remind you that he was not the type of physician I read about some time ago. "Why did you tear the back part of the new book out?" asked the gentle wife of the absent-minded doctor. "Excuse me, dear," said the famous surgeon, "the part you speak of was marked appendix and I took it out without thinking." Doctors, as most human beings, are likely to get into a routine of doing things, so much so that sometimes they do them unthoughtedly. Such was not the case in the life of this man. He was a thinker, with poised mind, therefore he achieved. Mere words are inadequate to express our appreciation for that which has been accorded him. This occasion is really a commemoration of one of the most notable events in the history of medicine. The discovery of sulphuric ether as a general anesthetic is one of the greatest boons ever conferred upon humanity. It will be handed down through the annals of time.

Contrasting conditions of today with those under which Dr. Long labored, we realize how fortunate we are in reaping a heritage from our predecessor who had the vision and initiative to make an experiment a suc-

*Address unveiling statue of Doctor Crawford W. Long, Danielsville, March 30, 1936.



CRAWFORD W. LONG STATUE
Danielsville

cess. Today, with all the progress that has been made, while doing our bit toward the relief of suffering humanity, we have a tendency to become weary and discouraged. As we carry on it is the confidence and faith of those to whom we minister that sustain us.

Probably no one here today in his respective endeavor will make a discovery or an invention that will entitle him to a place in the Hall of Fame, but we pledge allegiance to the same ideals and standards of service that were so much in evidence in the life of the man whom we now honor.

As the representative of the medical profession of this county and the Clarke County Medical Society, composed of Oglethorpe, Oconee, Clarke, and Madison Counties, I wish to welcome you here—one and all.

The erection of this statue has been made possible by an Act of the General Assembly of Georgia appropriating the funds for this purpose. The bill for this appropriation was introduced by Mrs. Helen Williams Coxon and our Representative, the Hon. L. M. Smith, for which service they have our sincere thanks and appreciation.

We do not overlook our Senator, the Hon. James Skelton of Hartwell, who gave his hearty cooperation in this noble movement. We appreciate and want to thank Hon. Eugene Talmadge, Governor, for his signature approving the bill for this memorial.

The success of this occasion has been made possible by the painstaking work and planning of the committee appointed by the Governor. Their names appear on your program.

We are more than pleased to have Mrs. Eugenia Long Harper, a daughter of Dr. Long, with us for this occasion, Providence having given her health and strength to be present. Also, Mr. E. C. Long, Jr., a great-grandson, is here.

We are pleased to extend our very great appreciation to our Commissioner, Mr. W. H. Compton, for his able assistance, together with the convicts, in our effort to make this occasion a success. The Woman's Club comes in for a bountiful share of thanks and remembrance for its part of the service rendered.

In keeping with this occasion I think it would be appropriate to quote two sentences of "The Physician's Prayer" by Maimonides of the twelfth century:

"Endow me with strength of heart and mind, so that both may be ready to serve the rich and poor, the good and the wicked, friend and enemy, and that I may never see in the patient anything but a fellow creature in pain. Thou hast appointed me to watch o'er the life and death of Thy creatures; here am I, ready for my vocation."

To Dr. Long's memory, work and accomplishments, I make the following remarks as a salute:

The illustrious son of our Southland, a worthy Georgian, and a beloved Madison County boy who achieved fame and renown throughout the world—Dr. Crawford W. Long—whose statue I now salute.

A plan which will afford treatment to every person having tuberculosis and assistance in planning relief for them and their families in all cases wherever it may be required has been formulated and its operation will be commenced within a few days and developed to its full extent as rapidly as possible. The successful operation of this plan is assured by agreement of the Public Assistance Division of the State Welfare Department, the Georgia Tuberculosis Association, and the State Board of Health to coordinate their resources.—*Announcement by the Georgia State Board of Health.*

TRIGEMINAL NEURALGIA

FERDINAND C. LEE, M.D.

Riderwood, Md.

In connection with work on meralgia paraesthetica reported elsewhere¹ it was found that freeing the lateral femoral cutaneous nerve from its fibrous bed below the anterior superior spine of the ilium caused an immediate improvement. Since the above mentioned article went to press, and now 8½ months after operation, the patient on whom this new operation was performed is completely cured. The purpose of this brief communication is to point out the possibility that the causes for trigeminal neuralgia and meralgia paraesthetica may be similar.



FIG. 1

Sagittal section of the head to show the sharp angle which the sensory root of the right fifth cranial nerve makes in extending from the pons, P, over the apex of the petrous portion of the temporal bone, T, to the Gasserian ganglion, G.

But first a certain parallelism between the two conditions must be mentioned, even though there are obvious differences. Both occur primarily in adult individuals. Both may follow infections. Both are not infrequently bilateral. Both may have sharp burning pains, and in both these pains may be influenced by atmospheric or weather conditions. In both diseases the spread of the pain is progressive, usually beginning in the most peripheral portion of the distribution of each nerve, involving first the region near the knee in meralgia paraesthetica, and most often the mandibular nerve in trigeminal neuralgia. Both nerves are predominantly sensory in character; the motor branch of the trigeminal nerve is small, separate from the sensory division, and almost never affected in tic douloureux.

There is also a similarity in the anatomic considerations. The lateral femoral cutan-

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

AUGUST, 1937

ZEAL

The history of medicine reveals the crystallization of the idea that medical men should have authority where matters concerning medical teaching and practice are concerned. This view is not limited to the doctor-patient relationship but extends to the broader field of social interests. In our state and nation are many people who are financially unable to meet the demands of any but the most minor of human ailments; and, because of lack of education, do not lead lives conducive to health. These people need proper schooling, housing, comfortable wearing apparel and the right kind and quantity of food. When illiteracy is banished those suffering therefrom will have reached such a state of pride that they will desire to own comfortable homes and secure the other requisites for happy and healthful existence. Furthermore, they will have learned the underlying principle which science has taught is the basis of sanitary living, and will have attained economic independence which will permit them to summon the physician of their choice when illness and accident supervene.

I believe democracy the most desirable form of government yet devised by man, but some of the novel forms of experimental governments seem to arouse something within their adherents not found in democracy—Zeal for the cause almost amounting to religious fervor, and a desire to contribute something to the state rather than expect to get something from it. This illustration is cited for the purpose of appealing to physicians to prosecute our efforts zealously—the present mode of thinking and planning has little patience with lukewarmness.

Physicians are not callous to moral values, and have always, and will continue, to cooperate with various governmental agencies in the means they may devise for the alleviation of human suffering in whatever guise.

Recent events may prove to be the spark that will kindle within the rank and file of the medical profession the desirability of emerging from a self-imposed silence and retirement from participating in affairs of state, and inspire us with a broader interest in matters for the good of the general public. It is no less than our duty, and, unless the average doctor concerns himself in such matters outsiders will, and those who follow in our footsteps may well blame the present generation of physicians for masterful inactivity and negligence in protecting ours and their birthrights.

Your State Medical Association, through its hard-working and commendable Committee on Public Policy and Legislation, failed in its repeated efforts to have a law passed which would permit counties to levy a tax to take care of their indigent sick. If each member of our State Association would approach his representative with zeal in his heart, and explain the need of such a law, and its humanitarian aspects, it is believed no political consideration would prompt him to reject such a measure for it is a moral obligation that transcends any political expediency.

THE MEDICAL ASSOCIATION OF GEORGIA is making an honest and worthwhile endeavor to educate the masses in matters of health through its newly established Bureau of Public Relations. Every doctor in Georgia should feel it a privilege to contribute his moral and financial support to this disinterested and humanitarian effort. Contributions, however small, are welcome. This is an opportunity to really put something into our profession.

Let it not be said of the noble heritage that has been bequeathed us that "The moral judgment of mankind" is against us, but, rather, let us prosecute a campaign of public enlightenment, cooperation and unselfishness with an enthusiasm that those living and those who follow may be able to say we failed them not.

GEO. A. TRAYLOR, M.D., *President.*

The JOURNAL would like to record the scientific work of Georgia doctors. It earnestly requests, therefore, that each physician in the State who publishes a contribution in some other medical periodical submit an abstract of the article for these columns.

ACUTE PULMONARY TUBERCULOSIS

Under this caption acute miliary tuberculosis of the lungs, the white caseous pneumonia occasionally encountered in infancy, and the rapidly spreading fulminant case of tuberculosis often referred to as galloping consumption will not be considered. There is brought to your attention those instances of pulmonary tuberculosis which begin quite acutely and masquerade under the guise of acute respiratory disorders. This manifestation of pulmonary tuberculosis has been observed more and more by phthisiologists in recent years.

The immunoallergic factors involved are complex and at present little understood. Following the entrance of tubercle bacilli into the body a hypersensitive or allergic state is produced. This is the basis for the tuberculin test, registering the presence or absence of allergy which means the presence or absence of tubercle bacilli in the body. Following the initial introduction of tubercle bacilli there evolves the so-called primary complex. With the establishment of an allergic state, the allergin being the protein of the tubercle bacillus, a different sequence of events results with the further introduction of bacilli. This is the reinfection type of tuberculosis, and accounts for the usual picture seen in adults suffering from pulmonary tuberculosis. This allergic response, this reinfection disease, may vary tremendously from a gradual indolent progressive course to an acute explosive clinical entity. As mentioned above, the trend is toward an increasing frequency of the latter. Several factors may enter into the explanation as increased virulence and inoculum of the allergin, decreased resistance or immunity of the host and a heightened sensitiveness of the invaded organism.

The earlier conception of the evolution of the tuberculous process in the lung was a small infiltration or lesion in the apex, slowly extending downward until a greater or less involvement of the lung resulted. This concept of the usual progression of the disease has long since been abandoned since it is realized that such evolution rarely occurs. It is now known that the usual site of the earliest lesion is the infraclavicular zone; from which the disease may spread in all di-

rections with varying degrees of rapidity and with varying pathologic manifestations. It is commonly noted that when pulmonary tuberculosis is limited to the apex (above the clavicle) it, as a rule, remains there for years, and the prognosis in these cases is almost invariably favorable.

Not infrequently the onset of pulmonary tuberculosis may be amazingly acute and abrupt and the diagnoses usually made are influenza, acute bronchitis or pneumonia. Unless the physician is alert many cases of pulmonary tuberculosis will go unrecognized with the sad awakening and perhaps some embarrassment to follow later. By careful and close clinical observation together with frequent serial x-ray films, many of these acute cases have shown a tendency to undergo resolution, leaving very little in their wake to indicate their true character. The significance of their true nature is no less belittled, however. This tendency for these acute lesions to flare and subside accounts for the often encountered recital, in tuberculous individuals, of frequent attacks of influenza, pneumonia and chest colds in their past history. The explanation of these past episodes is that they are acute exudative parenchymatous expressions of tuberculosis.

In all acute respiratory explosions, particularly where there are any suggestive features, are in any way atypical or are exceptionally long drawn out, keep tuberculosis in mind. In every case, repeatedly examine the sputum for tubercle bacilli. You may be surprised. You will be rewarded.

CHAMP H. HOLMES, M.D.

EIGHTY-NINTH ANNUAL SESSION OF THE ASSOCIATION—DATES CHANGED

By authority vested in the Council of the Medical Association of Georgia under Article VII, Section 1 of the Constitution, and on petition of the Richmond County Medical Society; the Council has changed the dates for the eighty-ninth annual session of the Medical Association of Georgia to April 26, 27, 28, 29, 1938.

All commercial and scientific exhibits; general meetings and meetings of the Council and House of Delegates will be held in the Forest Hills Hotel, Augusta, which will be headquarters.

WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, La-Grange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

EXECUTIVE BOARD MEETING

The Executive Board met at Hotel Dempsey, Macon, May 11, 1937. Mrs. William R. Dancy, President, presided.

Minutes of the post-convention meeting, Advisory Committee and Executive Board meeting, were read and adopted.

Mrs. C. W. Roberts, Atlanta, was elected to make the report for the Executive Board meeting to the convention.

The Nominating Committee from the Executive Board was: Mrs. Jas. N. Brawner, Atlanta, Chairman; Mrs. J. Bonar White, Atlanta, and Mrs. Wm. H. Myers, Savannah. From membership at large: Mrs. Chas. H. Richardson, Macon; Mrs. Jas. M. Barnett, Albany; Mrs. J. C. Patterson, Cuthbert, and Mrs. S. S. Smith, Athens.

Auditing Committee: Mrs. S. T. R. Revell, Louisville, Chairman; Mrs. George Fuller, Atlanta, and Mrs. W. F. Reavis, Waycross.

Resolutions Committee: Mrs. Eustace A. Allen, Atlanta, Chairman; Mrs. D. N. Thompson, Elberton, and Mrs. A. J. Mooney, Statesboro.

Executive Board Recommendations

The Year Book Committee continue its study and investigation of ways and means to publish an Auxiliary Year Book.

That the Committee for Design of President's Pin consider designs and make a selection for the "President's Pin" not to cost more than \$50, and that a President's Pin be given to all past-presidents and to all future retiring presidents.

That Nominating Committees be appointed at post-convention Executive Board meetings so that it may have ample time to compile and make up report. (Lost at annual session.)

That members of the Medical Association of Georgia be solicited to donate or provide legacies for the Memorial Scholarship Fund to be loaned to deserving medical students.

That The Medical Association of Georgia provide space at the Academy of Medicine, Atlanta, to file Auxiliary archives.

Mrs. J. Bonar White, Atlanta, presented the convention with an attractive poster which was on display at the last meeting of the Southern Medical Association which showed the activities of the Georgia Woman's Auxiliary during the fiscal year 1935-36.

Adjourned.

MRS. WM. R. DANCY, *President*

MRS. WARREN A. COLEMAN,

Recording Secretary.

MEETING OF EXECUTIVE BOARD AND HOUSE OF DELEGATES

The Executive Board and House of Delegates met at Hotel Dempsey, Macon, May 12, 1937. President Mrs. William R. Dancy presided.

Invocation by Rabbi Isaac Marcuson, of Temple Beth Israel Church, Macon.

Mrs. Chas. H. Richardson, Macon, introduced guests as follows: Mrs. Wm. R. Dancy, Savannah, President (corsage was presented to her by the Bibb County Auxiliary); Mrs. J. H. J. Upham, Columbus, O., wife of the president-elect of the American Medical Association; Mrs. B. H. Minchew, Waycross, wife of the President of the Association; Mrs. Frank K. Boland, Atlanta, wife of the President of the Southern Medical Association; Mrs. J. Bonar White, Atlanta, Chairman of the Public Relations Committee, Auxiliary to A. M. A.; Mrs. Ralph H. Chaney, Augusta, President-Elect of Auxiliary. Past Presidents of the Auxiliary introduced were: Mrs. Jas. N. Brawner, Atlanta; Mrs. C. W. Roberts, Atlanta; Mrs. Chas. C. Harrold, Macon; Mrs. Wm. H. Myers, Savannah; Mrs. S. T. R. Revell, Louisville, and Mrs. J. E. Penland, Waycross.

Address of welcome by Mrs. Thomas Harrold, Macon.

Minutes of the twelfth annual session were read and adopted.

Dr. B. H. Minchew, Waycross, President of the Association, spoke on "An Estimate of the Value of the Woman's Auxiliary to the Medical Association of Georgia."

Dr. Wm. R. Dancy, Savannah, Past President of the Association, spoke on "Auxiliary Activities."

Mrs. J. Bonar White, Atlanta, Past President of the Auxiliary, spoke on "How to Promote Growth in Organized Auxiliaries."

Reports from districts were:

First District—Mrs. Cleveland Thompson, Millen.

Second District—Mrs. H. T. Edmondson, Moultrie.

Third District—Mrs. W. A. Coleman, Eastman.

Fifth District—Mrs. Eustace A. Allen, Atlanta.

Sixth District—Mrs. J. Lon King, Macon.

Tenth District—Mrs. H. G. Banister, Ila.

Reports from counties were as follows: Baldwin, Bibb, Bulloch - Candler - Evans, Chatham, Colquitt, Cherokee - Pickens, Clarke, Dodge, Dougherty, Elbert, Fulton, Randolph, Richmond, Stephens, Toombs, Troup, Washington and Ware.

Mrs. J. E. Penland, Waycross, parliamentarian, read the rules for convention procedure.

Mrs. C. W. Roberts, Atlanta, chairman, made the report for the Executive Board.

Mrs. W. E. Mobley, Macon, Chairman, made the report for the Credentials Committee.

Announcements by the President of the appointment of other committees were:

Courtesy Committee—Mrs. Cleveland Thompson, Millen, Chairman; Mrs. C. L. Ayers, Toccoa; Mrs. Loren Gary, Shellman.

Committee on Revisions—Mrs. Lee Howard, Savannah, Chairman; Mrs. C. W. Roberts, Atlanta; Mrs. J. E. Penland, Waycross.

Committee on Publicity—Mrs. C. W. Roberts, Atlanta, Chairman, and Mrs. Ralph H. Chaney, Augusta.

Dr. J. L. Campbell, Atlanta, Chairman of the Cancer Commission of the Association, spoke on "Cancer Control."

Proposed amendment to Article II, Section 8 of the By-Laws to amend by striking the words "have charge of the registration of members and delegates at the annual session."

Wire of greetings from Mrs. Ralston Latimore, Past President, Savannah, was read and answered.

Mrs. A. J. Mooney, Statesboro, Chairman of Health Film Committee, showed a "Health Film."

Adjourned.

MRS. WM. R. DANCY, *President*
MRS. WARREN A. COLEMAN,
Recording Secretary.

THIRTEENTH ANNUAL CONVENTION

The thirteenth annual convention was held at Hotel Dempsey, Macon, May 13, 1937. Mrs. William R. Dancy, President, presided.

Invocation by Rev. Randolph Claiborne, rector of St. James Episcopal Church, Macon.

Address of Welcome by Mrs. H. C. Atkinson, Macon.

Response to Address of Welcome by Mrs. Clem C. Brannen, Moultrie.

Mrs. L. W. Williams, Savannah, read report of Mrs. Olin S. Cofer, Atlanta, delegate to the S. M. A. Auxiliary.

Dr. Geo. A. Traylor, Augusta, President-elect of the Association, spoke on "Our Mission."

Dr. Jas. N. Brawner, Atlanta, Chairman of the Advisory Committee to the Woman's Auxiliary, read report of the Committee.

Motion carried to extend sympathy to Mrs. Allen H. Bunce, Atlanta, on account of the illness of her mother which prevented her attendance at the convention and address on "Student Loan Fund."

Mrs. William R. Dancy, President, made her report.

Reports by the following officers were made:

President Elect—Mrs. Ralph H. Chaney, Augusta.

Second Vice President—Mrs. C. L. Ayers, Toccoa.

Third Vice President—Mrs. J. A. Redfearn, Albany.

Recording Secretary—Mrs. Warren A. Coleman, Eastman.

Corresponding Secretary—Mrs. Lee Howard, Savannah.

Treasurer—Mrs. W. A. Selman, Atlanta.

Historian—Mrs. Grady N. Coker, Canton.

Mrs. S. T. R. Revell, chairman, made the report of the Auditing Committee.

Mrs. Wm. H. Myers, Savannah, read the report of Mrs. Luther A. Deloach, Savannah, delegate to the American Medical Auxiliary.

Reports from standing committees were as follows:

Health Film—Mrs. A. J. Mooney, Statesboro.

Public Relations—Mrs. Wallace Baze-more, Macon.

Legislation—Mrs. Dan Y. Sage, Atlanta.

Research in the Romance of Medicine—Mrs. D. N. Thompson, Elberton.

Jane Todd Crawford Memorial — Mrs. Eustace A. Allen, Atlanta.

Resolution was adopted to urge all members to write their representatives in the General Assembly of Georgia to support the Basic Science bill.

Mrs. Cleveland Thompson, Millen, Chairman of the Courtesy Committee, read its report, which was adopted.

Mrs. R. S. O'Neal, LaGrange, conducted memorial services for Mrs. E. C. Thrash, Atlanta, and Mrs. W. E. Kellogg, Augusta, deceased.

Recommendations of the pre-convention Executive Board meeting adopted were as follows:

That the Year Book Committee continue its work to compile and print Year Book with full authority to complete the work.

That the Committee for Design of President's Pin continue its consideration of designs and investigation of quality and prices.

That all local Auxiliaries be assessed one dollar each to pay for "President's Pin" for all past presidents and future retiring presidents.

That members of the Medical Association of Georgia be asked to donate funds or provide legacies for the Memorial Scholarship Fund to be loaned to deserving medical students.

The Nominating Committee submitted the following nominations:

President Elect—Mrs. Warren A. Coleman, Eastman.

First Vice President—Mrs. H. G. Banister, Ila.

Second Vice President—Mrs. J. Lon King, Macon.

Third Vice President—Mrs. R. S. O'Neal, LaGrange.

Recording Secretary — Mrs. Cleveland Thompson, Millen.

Treasurer—Mrs. W. A. Selman, Atlanta.

Historian—Mrs. Clem C. Brannen, Moultrie.

The secretary cast the unanimous vote of the convention for the election of the officers as listed.

Mrs. William R. Dancy, President, installed the new officers with an impressive ceremony.

Mrs. Ralph H. Chaney, Augusta, President for 1937-38, made the following appointments:

Mrs. W. E. Matthews, Jr., Augusta, corresponding secretary.

Mrs. Lee Howard, Savannah, parliamentarian.

Corsage was presented to Mrs. Wm. R. Dancy by the Georgia Woman's Auxiliary, and box of flowers by the Bibb County Auxiliary. Corsage was presented to Mrs. Ralph H. Chaney by the Richmond County Auxiliary and the Bibb County Auxiliary.

Minutes of the thirteenth annual convention were read and adopted.

Convention adjourned.

MRS. WM. R. DANCY, *President*

MRS. WARREN A. COLEMAN,
Recording Secretary.

SOCIAL AFFAIRS

A series of delightful social entertainments were provided in honor of the visitors in Macon, including an informal dance at the Dempsey Tavern and buffet supper and dance at Idle Hour Club.

TRIGEMINAL NEURALGIA

(Continued from Page 431)

ous nerve makes a sharp bend at the anterior spine of the ileum; the sensory branch of the fifth cranial nerve also makes a bend over the apex of the petrous portion of the temporal bone to reach the gasserian ganglion in the fossa of Meckel, as is shown in Fig. 1.

This figure was drawn from a sagittal section of the head with the brain *in situ*. The sensory root of the right fifth cranial nerve can be seen extending upward from the pons, P, crossing the top of the petrous portion of the temporal bone near its apex, T, and then descending into the middle cranial fossa to join the gasserian ganglion, G. The fibers that come off most inferiorly from the brain stem make a right angle before reaching the ganglion; the superior fibers have hardly any angulation at all.

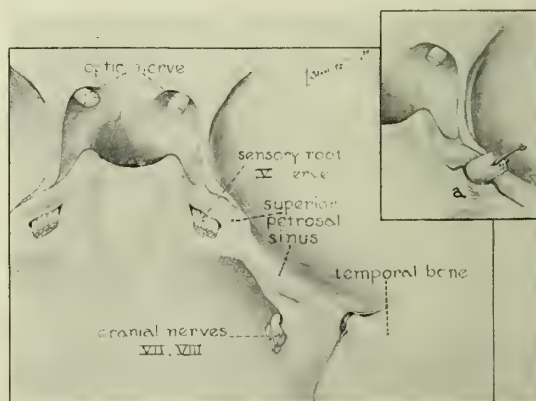


FIG. 2

View from the posterior cranial fossa to show the position of the sensory root of the right fifth cranial nerve between the superior petrosal sinus above and the temporal bone below. The insert shows at A the small depression in the temporal bone underneath the sensory root of the fifth nerve.

Furthermore, the sensory root of the fifth nerve is also beset from above because here, as will be seen from Figure 2, it is covered by the superior petrosal sinus. The small insert in this figure shows that the temporal bone has a small depression, a, at the place where the sensory root crosses it.

In brief, it is felt that the possibility exists not only for tension on the sensory root of the fifth nerve as it passes over the temporal bone, but also for compression of the nerve by the superior petrosal sinus to produce the condition of trigeminal neuralgia. Of the two factors, the former would seem to have more weight. This idea can be put to the test by any one who can elevate the superior petrosal sinus and remove some of the bone underneath the sensory root. The patient would then not only be freed of his pain but he would not lose any of those normal fifth nerve sensations which must of necessity be sacrificed when the fibers of the sensory root are cut.

1. Lee, F. C., *Meralgia Paraesthetica*, International Clinics, 1936, Vol. 1, 46th Series, 210.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

HISTORY OF BIRTH AND DEATH REGISTRATION IN GEORGIA

Many people believe that vital statistics are of recent origin but as a matter of historical fact some of the ancient civilizations required the registration of births and deaths. The statistical treatment of the records was, however, comparatively limited and it is only within the last fifty years that vital statistics has evolved to its present stage of development.

It was not until 1823 that the Georgia General Assembly passed a law providing for the registration of births; however, years before this date practically every family in the State kept a record of births and marriages. The value and importance of these records were recognized by our forefathers long before such registration was required by the civil laws.

In 1875 another vital statistics law was passed requiring the registration of both births and deaths; this was an improvement over the first law but was proved inadequate to secure complete registration. Again in 1914 the General Assembly passed a vital statistics law corresponding to the "Model Vital Statistics Law" and adopted and successfully operated in the majority of the states. Under this law the Bureau as established now was organized in 1919. In 1925 the Supreme Court declared that part of the law relating to the payment of local registrars fees to be unconstitutional. This decision caused many of the local registrars to resign with a resultant decrease to registration to an extent that the State as a whole was dropped from the registration area.

vital statistics law, with slight amendments was reenacted without a dissenting vote.

During the latter part of 1927, the Bureau of the Census conducted a test to determine the completeness of birth and death registration. The test showed that registration was over 90 per cent complete and was, therefore, admitted to the registration area for both births and deaths beginning with the year 1928.

Dr. Abercrombie, Director of Public Health, is particularly anxious for me to outline some of the history and vital statistics value in birth and death registration. I will mention some of the advantages of birth and death registration.

For every militia district in the State there is appointed a local registrar who is the official with whom birth and death certificates must be registered until the tenth of the following month when they are forwarded to the State Bureau of Vital Statistics. Usually the local registrar is the Justice of the Peace or the Notary Public exofficio justice.

In the case of a birth, it is the duty of the doctor or other person in attendance to file a certificate of birth with the local registrar within ten days after the date of birth. The undertaker or person acting as undertaker is required to file with the local registrar the certificate of death and secure a burial or removal permit before any disposition is made of the body.

Although the law requires the doctor or other attendant at birth to file the certificate, parents should insist upon prompt registration. Many times the doctor forgets to file it within the ten days provided. This neglect

NUMBER AND PER CENT OF LIVE BIRTHS BY ATTENDANT
AT BIRTH, IN GEORGIA: 1929-1936

Year	Total Births	NUMBER			PER CENT		
		Physician	Midwife	Other	Physician	Midwife	Other
1929	58,521	38,448	19,956	117	65.7	34.1	0.2
1930	60,318	39,416	20,728	174	65.3	34.4	0.3
1931	61,774	38,322	23,315	137	62.0	37.7	0.2
1932	63,690	37,981	25,578	131	59.6	40.2	0.2
1933	60,744	35,112	25,396	236	57.8	41.8	0.4
1934	64,615	39,498	25,043	74	61.1	38.8	0.1
1935	63,290	37,312	25,737	241	59.0	40.7	0.3
1936	61,327	35,526	24,248	263	59.2	40.4	0.4

NOTE: 1936 figures are provisional and subject to correction in final tabulations.

At the call session of the Legislature in 1926 a bill was passed providing for an amendment to the Constitution, legalizing the payment of the local registrars fees from county funds. This amendment was ratified in the state-wide election in 1927. At the following session of the General Assembly the

causes unnecessary embarrassment in not being able to secure a certificate for proof of age, of parentage, of right to vote, or any other act concerning the legal age. These and many other emergencies are likely to arise, any one of which might be easily settled by the evi-

dence contained in a properly filed birth certificate.

The registration of deaths is of equal importance in the settlement of estates and matters of inheritance, pensions and insurance. Without accurate birth and death records it is often impossible to determine the rights of widows and orphans except through costly law suits. These records are necessary to an intelligent public health work in preventing disease and prolonging life.

I wish to call your attention to the table below which gives the per cent of births attended by physician, midwives and others from 1929 to 1936. It is difficult for this office to assume that the percentage of Georgia's births is 40.4 attended by midwives for 1936.

These facts together with the others mentioned should be borne in mind by the physician with care and consideration and in the future make Georgia one of the model registration states in the union.

BUTLER TOOMBS, *Chief*
Bureau of Vital Statistics.

NEWS ITEMS

THE THOMAS COUNTY MEDICAL SOCIETY met at the John D. Archbold Memorial Hospital, Thomasville, on June 16th. Dr. Chas. H. Watt, Thomasville, explained the amendment to the Workmen's Compensation Act passed at the last session of the General Assembly of Georgia and gave a report on the proceedings of the House of Delegates at the Macon session. Dr. M. W. Williams, Camilla, reported a case and presented 4-year-old patient with *Precocious Menstruation*; patient had been menstruating regularly since the age of two years. Dr. Chas. H. Watt, Thomasville, read a paper entitled *Non-Parasitic Intestinal Cysts* and reported a case in which such cysts had been removed. Dr. J. I. Palmer, Thomasville, discussed *Recurrent Abdominal Pain in Children*; discussed by Dr. J. J. Collins, Dr. Mary J. Erickson and Dr. C. H. Ferguson, all of Thomasville. Dinner was served in the dining hall of the Hospital. The next meeting will be held on September 15th.

THE AMERICAN BOARD OF PATHOLOGY held its first examination at Baltimore, Maryland, in November, 1936. Among the physicians of Georgia who took the examination and were awarded certificates were: Dr. E. L. Bishop, Atlanta; Dr. Edgar R. Pund, Augusta; and Dr. E. B. Saye, Macon. Dr. Roy R. Kracke, Emory University, is a member of the Board.

THE MUSCOGEE COUNTY MEDICAL SOCIETY met on June 30th. Dr. Joe P. Bowdoin, State Board of Health, Atlanta, spoke on the *Diagnosis and Treatment of Poliomyelitis*.

DR. SCHLEY GATEWOOD, of Columbus, has been appointed to the medical staff of the Patterson Hospital, Cuthbert. He was formerly at the United States Marine Hospital, New York City.

DR. EDGAR G. BALLENGER, Atlanta, was elected president-elect of the American Urological Association at its annual session recently held in Minneapolis, Minn.

DR. S. M. WITHERS, JR., former intern at the Piedmont Hospital, Atlanta, has accepted the position as medical supervisor of the Callaway Mills, LaGrange.

DR. ARTHUR G. FORT and DR. LESTER A. BROWN announce their association in the practice of ophthalmology and otolaryngology with offices in Suite 815 Doctors' Building, 478 Peachtree Street, N. E., Atlanta.

THE FIRST DISTRICT MEDICAL SOCIETY met at Hotel DeSoto, Savannah, July 21st. Titles of papers on the scientific program were: *Vesicular Eruptions of the Hands and Feet*, by Dr. S. E. Bray, Savannah; *Hypersensitiveness to Cold or Chilling in Certain Individuals—A Real Danger as a Cause of Drowning while Swimming or Bathing*, Dr. J. Reid Broderick, Savannah; *Carcinoma of the Colon*, Dr. H. L. Levington, Savannah; *Recent Developments in Socialization of Medicine*, Dr. Wm. H. Myers, Savannah; *Lead Poisoning in Childhood—Report of Cases*, Dr. E. N. Gleaton, Savannah; *Surgical Treatment of Menstrual Pain*, Dr. J. K. Quattlebaum, Savannah.

DR. W. W. BROWN, Athens, Clarke County Commissioner of Health, conducted tuberculosis clinics in Athens on July 7-8.

DR. J. A. REDFEARN, Albany, spoke over radio station WGPC on the *Prevention of Tuberculosis and Care of Tuberculosis Patients*, July 6th.

DR. J. P. KENNEDY, Atlanta health officer for 36 years, has just been re-elected for another 4-year term.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met at the Harrison Hotel, Jefferson, July 5th. Dr. J. T. Stovall, Jefferson, read a paper entitled *Differential Diagnosis of Lesions of the Right Side of Abdomen with Special Reference to Urology*. The paper was discussed by Dr. L. C. Allen, Hoschton, and Dr. Laetus Sanders, Commerce.

THE WARE COUNTY MEDICAL SOCIETY met at the Y. M. C. A. building, Waycross, on July 7th. Dr. B. H. Minchew, Waycross, reported a case, *Surgical Case in Which Vision Had Been Restored and Growth Removed*. Dr. L. W. Pierce, Waycross, read a paper entitled *Pyelitis Associated with Pregnancy*; discussed by Dr. T. J. Ferrell, Dr. W. C. Hafford, Dr. J. E. Penland and Dr. W. L. Pomeroy, all of Waycross.

DR. E. F. FINCHER announces the association of Dr. Exum Walker in the practice of neurology and surgery with offices in the Medical Arts Building, Atlanta.

DR. WILLIAM B. QUILLIAN, JR., formerly an intern at Grady Hospital, Atlanta, announces the opening of offices at 118 Market Street, Cartersville, for the practice of general medicine and surgery.

DR. HUGH E. HAILEY is in Europe taking post-graduate work in dermatology and syphilology. He will return to Atlanta October 1st and will be associated with his brother, Dr. Howard Hailey, in practice with offices in the Candler building, Atlanta.

OBITUARY

THE NEXT REGULAR MEETING of the Fulton County Medical Society will be held at the Academy of Medicine, Atlanta, on September 2nd.

THE FOURTH DISTRICT MEDICAL SOCIETY met at Thomaston on August 11th. Titles of papers on the scientific program were: *Geriatrics*, by Dr. Willis P. Jordan, Columbus; *The Diagnosis and Treatment of Bronchiectasis*, Dr. C. C. Aven, Atlanta; *Address*, Dr. Geo. A. Traylor, Augusta, President of the Association; subject to be selected, Dr. Thomas Harrold, Macon; *Anorectal Fistula*, Dr. W. E. Person, Atlanta.

OFFICERS OF THE CHATTAHOOCHEE VALLEY MEDICAL ASSOCIATION elected at the close of the annual meeting at Radium Springs, Albany, on July 14th, were: Dr. James J. Clarke, Atlanta, president; Dr. L. W. Holloway, Jacksonville, Fla., first vice president; Dr. Seale Harris, Jr., Birmingham, Ala., second vice president; Dr. Frank K. Boland, Atlanta, re-elected secretary-treasurer; Dr. Robert B. McIver, Jacksonville, Fla., member of the council.

DR. J. WEYMAN DAVIS, Athens, has been elected to fellowship in the American College of Surgeons.

DR. W. C. HUMPHRIES, former Spalding county commissioner of health and resident of Griffin, announces his retirement from public health work and removal to Acworth.

DR. JOHN I. HALL, DR. C. N. WADEN and DR. A. M. PHILLIPS announce their association in the practice of orthopedic surgery, general surgery and proctology with offices in Suite 4, 553 Walnut Street, Macon.

DR. AND MRS. D. H. GARRISON, Clarksville, entertained members of the Habersham County Medical Society and Auxiliary in their home on July 8th.

THE QUARTERLY MEETING of the Southwest Section of the Georgia Public Health Association met at Camilla on July 22nd.

Dr. Louis Holtz, formerly of Fargo, Clinch county, has been appointed camp surgeon for Company 4488, C.C.C., at Ashland, Ala.

Notifiable disease cases numbering fifty and above which have been reported to the Division of Epidemiology by physicians and health officers for the month of May, 1937, are as follows: chicken-pox, 220; gonorrhea, 473; hookworm, 1,292; influenza, 118; malaria, 526; mumps, 223; pellagra, 51; pneumonia, 225; syphilis, 1,096; whooping cough, 209; tuberculosis, 168.—*Georgia's Health*.

In an age no longer governed by the ancient and medieval attitude toward omens, it is still impossible to escape from the acknowledgment of certain superstitions and there is an uncanny pleasure derived in noting the significance of a coincidence of events.—*Orleans Parish Med. Soc. Bulletin*.

Dr. Dunbar Roy, Atlanta; member: University of Virginia Department of Medicine, Charlottesville, Va., 1889; aged 71; died of heart disease at his home in the Georgian Terrace Hotel, Atlanta, July 5, 1937. He was born and reared in Atlanta. After he received his degree in medicine, he studied diseases of the eye, ear, nose and throat in Europe for one year, then returned to Atlanta and began the practice of medicine, and was on the faculties of the Southern Medical College, Atlanta College of Physicians and Surgeons and Emory University School of Medicine. Dr. Roy was one time vice president of the American Laryngological Society; president of the American Ophthalmological, Otolological, Laryngological and Rhinological Society; held offices in the Otolaryngological Section of the American Medical Association, Southeastern Surgical Congress, chairman of the Eye, Ear, Nose and Throat Section of the Southern Medical Association. Dr. Roy served in the medical corps of the United States Army as captain during the World War. He was a member of the Fulton County Medical Society, Southern Medical Association, Southeastern Surgical Congress, American College of Surgeons, American Medical Association and the Episcopal church. While he traveled in Europe, he was a close observer of political trends and wrote interesting articles on phases of life and politics. Surviving him are his widow. Funeral services were conducted from Spring Hill chapel by Bishop H. J. Mikell. Honorary pallbearers were: Dr. S. T. Barnett, Dr. B. McH. Cline, Dr. W. S. Elkin, Dr. Murdock Euen, Dr. C. G. Giddings, Dr. W. S. Goldsmith, Dr. Carter Smith and Dr. Samuel A. Visanska. Burial was in Hollywood Cemetery, Richmond, Va.

Dr. Stephen Benjamin Malone, Sandersville; member: Atlanta College of Physicians and Surgeons, Atlanta, 1904; aged 59; died at a private sanitarium in Sandersville of apoplexy on June 25, 1937. He moved from Fayetteville to Sandersville when he began the practice of medicine more than thirty years ago. Dr. Malone was associated in practice with his brother, Dr. George W. Malone, who died a number of years ago. He took postgraduate work at Chicago, New Orleans and attended clinics in Europe. Dr. Malone had been a prominent figure in the civic life of Washington county for many years and a leader in the medical profession. For a number of terms he served on the city council, city health officer; was a member of the Washington County Medical Society, Shrine, steward and member of the Methodist church. Surviving him are his widow, one brother, Hugh Malone, Kentwood, La.; two sisters, Mrs. Elizabeth Glass, Fayetteville, and Mrs. Dora Malone, Chattanooga, Tenn. Funeral services were conducted from the Methodist church by Rev. Reese Griffin. Members of the Washington County Medical Society were honorary pallbearers.

Dr. W. Z. Faust, Lexington; Louisville Medical College, Louisville, Ky., 1878; aged 83; died at his home on July 13, 1937. He had practiced medicine in Oglethorpe and adjoining counties for more than fifty years, had numerous friends and was respected by all who knew him. Surviving him are four daughters,

Mrs. Frank Shipley, Mrs. John Durden, Mrs. J. B. Beadle and Miss Belle Faust: two sons, J. G. Faust and Walter Z. Faust, Jr. Funeral services were conducted by Rev. W. H. Faust, Atlanta, Rev. J. T. Young and Rev. Clyde Lee. Burial was in the churchyard at the Presbyterian church.

RESOLUTIONS ON THE DEATH OF DR. LEWIS MACFARLAND GAINES

Our friend and beloved fellow physician, Lewis MacFarland Gaines, died May 24, 1937, from an attack of coronary thrombosis. He was born May 16, 1878, in Augusta County, near Staunton, Va. His father was Dr. Frank Henry Gaines, the founder of Agnes Scott College at Decatur, Ga., and his mother was Mary Louise Lewis. He is survived by his mother, wife and three children: two daughters, Mary Eloise and Virginia Ethel, and a son, Alexander Pendleton.

Dr. Gaines received his A.B. and B.S. degrees from Hampden-Sydney College in 1898, and spent one year at the University of Virginia doing post-graduate work. He obtained his medical training at Johns Hopkins University, from which he graduated in 1903. After graduating in medicine and serving an internship he was appointed Professor of Anatomy and Physiology at Wake Forest College, North Carolina, where he served from 1904 to 1907.

In 1906 Dr. Gaines married Miss Virginia Ethel Alexander of Atlanta. In 1907 he moved to Atlanta and limited his practice to internal medicine and neurology. In 1911 he was appointed Professor of Neurology at the Atlanta School of Medicine, in which capacity he served for a period of two years. From 1913 to 1926 he was Associate Professor of Neurology and Psychiatry at Emory University School of Medicine. Soon after coming to Atlanta he became a member of the Fulton County Medical Society and THE MEDICAL ASSOCIATION OF GEORGIA. He was also a member of the American Medical Association, the Southern Medical Association and the Southern Interurban Clinical Club. Dr. Gaines took an active interest in the various medical societies of which he was a member and read many papers on subjects relating to internal medicine and neurology. His papers were published in THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA, the Southern Medical Journal and in The Journal of the American Medical Association. In 1929 he served as Chairman of the Section on Nervous and Mental Diseases of the Southern Medical Association. At the time of his death he was Chairman of the Committee on Medical Economics of the Fulton County Medical Society and of THE MEDICAL ASSOCIATION OF GEORGIA. Medical economics, which to his broad mind included the living standard of physicians, the welfare of patients and the health and well-being of the whole community, was a subject close to his heart and during the latter part of his life he gave much time to the study of economic problems as related to the practice of medicine. He was a member of the Presbyterian Church, the Pi Kappa Alpha collegiate and the Phi Chi medical fraternities.

Dr. Gaines' family relations were ideal; he was a good husband, and a loving and considerate father.

Among his friends he was quiet, unassuming and well poised and had the happy faculty of being able to adapt himself to his associates, whether friends or patients. In his own serene way he was always willing to help or comfort a friend in need. His genial and comforting talks to neurotic patients often had a curative value far greater than that of any drug. His inherited mental capacity, coupled with his broad experience, gave him an unusual insight into the interrelations of the patient's mind and body. Occasionally, among a selected group of friends, he would expound the effects of body toxins on the functioning of the mind and then he would explain how an emotional turmoil would in turn produce somatic poisons or even organic changes in the tissues of the body. Briefly, Dr. Gaines was a physician who showed marked ability in the diagnosis and treatment of human ills and was at all times considerate of his patients and was recognized by all as a scholarly Christian gentleman.

WHEREAS, God has seen fit to take from us our friend and confrere, therefore,

BE IT RESOLVED, that we extend to his wife, children and aged mother our heartfelt sympathy in their bereavement and that a copy of these resolutions be spread on the minutes of the Fulton County Medical Society and printed in THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA, and a copy be sent to the members of his family.

IRA A. FERGUSON, M.D.

CYRUS W. STRICKLER, M.D.

JAS. N. BRAWNER, M.D.

Chairman.

Resolutions on the Death of Dr. Walter Edgar Barber

Death came to our friend, Walter Edgar Barber, at Emory University Hospital, May 24, 1937.

Dr. Barber was a native Georgian, having been born in Hawkinsville, Oct. 5, 1885 where he lived until he entered medical school. He received his medical education at Emory University, from which he was graduated in 1913. His entire medical career was spent in Atlanta. He served his internship at old Wesley Memorial Hospital. He began the practice of medicine in Atlanta in 1914 and continued an active professional life until he was stricken with coronary occlusion two years ago, forcing his retirement from active practice.

Throughout his professional life he was an active member of organized medicine, having been a member of Fulton County Medical Society since 1914. He served the Society in many capacities—on committees, chairman of the Board of Censors and was honored in 1933 with the office of President. In each office he served ably with the interest of the Society first.

He was a member of the staffs of Grady, Crawford W. Long, Emory University and Georgia Baptist Hospitals. He served on the Board of Trustees of Grady Hospital and later as visiting surgeon.

He was active in Masonic circles and was Worshipful Master of his Lodge. It was due to his long training in Freemasonry that he was so well informed on parliamentary law. He presided at meetings with the utmost confidence and ease.

He was a member of the Druid Hills Methodist Church, having served as steward for many years. He

was an ardent golfer, thoroughly enjoying his friends on these occasions.

Dr. Barber's outstanding trait was his intense loyalty to a cause or to his friends. Those who knew his friendship were indeed fortunate. His was an energetic and dynamic personality. He was respected for his fairness and loved for his loyalty.

He is survived by his wife and two children; a son, Edgar, Jr., and a daughter, Rose Marion.

Stricken in the prime of his career he will be sorely missed. His many friends can hardly realize that he is no longer with us. To those who really knew him the loss is personal and deep; to organized medicine and his city the loss is a capable physician and a good citizen.

BE IT RESOLVED, that the Fulton County Medical Society record its expression of sorrow at the passing of one of its most valued members and that a copy be sent to the bereaved family and THE MEDICAL ASSOCIATION OF GEORGIA.

For when the One Great Scorer comes
To write against your name,
He writes—not that you won or lost
But—How you played the game.

M. T. BENSON, M.D.

J. M. MONFORT, M.D.

J. J. CLARK, M.D.,

Chairman.

June 17, 1937.

BOOK REVIEWS

Medical Urology. Irvin S. Koll, B.S., M.D., F.A.C.S. Attending Urologist Michael Reese Hospital. The C. V. Mosby Co., St. Louis, Mo.

The book opens with an adequate description of the anatomy of the male and female urethra followed by the diagnosis and treatment of gonorrhea in both sex. Then numerous details of complications are given with especial emphasis upon diagnosis and treatment. The chapters on granuloma inguinale and lymphogranuloma inguinale are concise and illuminating. A detailed description of the Frei test is given.

All venereal diseases including etiology, clinical pathology, symptomatology, complications, diagnosis, differential diagnosis and treatment are discussed clearly. This same plan of discussion is carried out admirably in detailing all phases of medical urology.

Two important chapters marked for emphasis are those devoted to an understanding study of sexual impotence and sterility.

The final chapter on differential diagnosis is on the order of tabulated formulas and would appeal to general practitioners, and medical students as well as the trained urologist.

Especial attention should be given the drawings and photographs together with the colored plates of endoscopic views of urethral pathology.

The reviewer thinks the author expresses himself in a clear and concise manner, avoiding at all times superfluous verbiage. Dr. Koll has produced a book covering the essentials of medical urology in 431 pages.

ED. H. GREENE, M.D.

The Thyroid and Its Diseases—J. H. Means, M.D. J. B. Lippincott Co. 602 pages.

"Being an account based in large measure on the experience gained in the thyroid clinic of the Massachusetts General Hospital by physicians and surgeons of the clinic and many other collaborators past and present."

While the author disclaims any attempt to present an encyclopedic work on the thyroid gland, he does discuss most important aspects of the gland and its clinical relations. The book is not in any sense a compendium of facts about the thyroid, but rather a most interesting and stimulating discussion of observations and experiences in thyroid study and diseases. To one who has heard Dr. Means lecture to students, the style is at once reminiscent of his classroom, interesting and provocative. It is not to be hastily scanned through, but to be read thoughtfully, a bit at a time, or for reference.

JOSEPH C. MASSEE, M.D.

Surgical Treatment, by James Peter Warbasse and Calvin Mason Smyth, Jr. Second Edition, 3 volumes with separate index; 2,617 pages with 2,486 illustrations, some in colors. Philadelphia and London. W. B. Saunders Company, 1937. Cloth \$35.00 set.

These are excellent reference books for general surgery. The volumes cover all branches of surgery in some detail. The sections on minor surgery, gynecological and abdominal surgery are particularly good.

One of the most valuable sections is that which deals with antiseptics, ointments and special surgical preparations.

There is a separate index which makes the volumes a pleasure to use.

The subjects are covered in a manner which gives the practitioner a concise and practical description of the operative and non-operative treatment of surgical conditions.

The operative technique is well described and illustrated.

Although some of the more highly specialized branches of surgery are not completely treated, this set of books is highly recommended to the general surgeon and general practitioner.

F. K. BOLAND, JR., M.D.

New and Nonofficial Remedies, 1937. Containing Descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1937. Cloth. Price, \$1.50. Pp. 557, LXIV. Chicago: American Medical Association, 1937.

The annual editions of this volume contain all that the busy physician needs to know concerning the newer preparations which he is daily importuned by the detail men of the pharmaceutical manufacturers to use. The remedies listed and described here have been examined and found acceptable by the Council on Pharmacy and Chemistry, the deliberative body charged by the American Medical Association with the performance of this service for the practitioner, who has not the time or means to make the determinations for himself.

Some new drugs have been added in the 1937 edition, the descriptions of which will be found in the groupings to which they belong. There are some noteworthy changes in classification. The various vasoconstrictors, Benzedrine, Ephedrine, Epinephrine and Neo-Synephrin, have been grouped together as phenylalkylamine derivatives under the heading "Epinephrine and Related Preparations." This terminology is in keeping with the Council's policy of avoiding therapeutically suggestive names. Another similar change is the abandonment of the classification "Medicinal Foods" and substitution of a chapter under the title "Vitamins and Vitamin Preparations for Therapeutic and Prophylactic Use" in the previous edition. The consideration of other classes of food preparations was long ago transferred to the Council on Foods. The chapter "Organs of Animals" which has heretofore included only endocrine preparations has been expanded by transfers to this heading of the chapters Liver and Stomach Preparations, and Insulin.

The book contains general articles, descriptive of the classification under which the various drugs are listed. According to the preface, more or less thorough-going revisions have been made of the articles: Arsenic Compounds; Compounds Containing Trivalent Arsenic; Compounds Containing Pentavalent Arsenic; Bismuth Compounds; Epinephrine and Related Preparations; Iodine Compounds; Iodine Compounds for Systemic Use; Mercury and Mercury Compounds; Pituitary Gland; Salicylic Acid Compounds; Serums and Vaccines; Antipneumococcic Serums; Silver Preparations; Tannic Acid Derivatives.

Annual Reprints of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1936, with the comments that have appeared in the Journal. Cloth. Price, \$1.00. Pp. 104. Chicago: American Medical Association.

This book is essentially a record of the negative actions of that distinguished body, the Council on Pharmacy and Chemistry of the American Medical Association; that is, it sets forth the findings concerning medicinal preparations which the Council has voted to be unacceptable for recognition and use by the medical profession. Many of the reports record outright rejection or the rescinding of previous acceptances; others report in a preliminary way on products which appear to have promise but are not yet sufficiently tested or controlled to be ready for general use by the profession.

Among the reports on out-and-out unacceptable products are Amend's Solution and the "Igol" products, iodine preparations marketed under misleading or unacceptable claims, the latter under an uninformative proprietary name; Androstine-Ciba, claimed to be a testicular extract and found to be an irrational combination of inactive preparations, marketed with unwarranted and misleading claims; Gadoment, a preparation of cod liver oil in a wax base with zinc oxide benzoin and phenol, proposed for use in the treatment of burns, cuts and minor skin irritations, found unacceptable as being an unoriginal product of insufficiently declared composition marketed under a coined proprietary name with unwarranted therapeutic claims,

and indirectly advertised to the public; the "Carasyl" preparations which are essentially mixtures of psyllium flour, karaya gum and fig flour, marketed with unsubstantiated therapeutic claims under a proprietary name.

In 1934 the Council sponsored an exhaustive report on bacteriophage therapy which pointed out that in view of the present status of knowledge, no such preparations could be accepted for New and Nonofficial Remedies. In this volume of the collected Council reports the Council declares the "Phagoid" preparations, a line of bacteriophage products, definitely unacceptable because they are offered to the medical profession with unscientific, unwarranted claims, thus encouraging physicians to use in a routine way medicaments, the therapeutic value of which had not been established, and because the preparations conflicted in other ways with the rules of the Council.

This volume includes a preliminary report on Trichophytin and Oidiomycin—trichophyton preparations marketed by Lederle Laboratories, Inc. This report is a sequel to the preliminary report on Trichophyton Extract issued in 1932, which postponed consideration to await development of further clinical evidence on Trichophyton therapy. Also included in this volume is a report on the unacceptability of two trichophyton preparations, Dermatormylol and Dermotricofitin, distributed in this country by Ernst Bischoff Co., Inc., under the stated proprietary names without sufficiently declared composition and with unwarranted therapeutic claims.

Other preliminary reports are Refined and Concentrated Antipneumococcic Serum Type VII—Lederle. Present Status of Tetrochloroethylene (since accepted for N.N.R.), Smallpox Vaccine (from Chick Chorio-Allantoic Membrane)—Lilly, and Use of Trichloroethylene for General Anesthesia.

THE EFFECT OF "BENZEDRINE SULFATE" ON THE RAT

Ehrich and Krumbharr (*Ann. Int. Med.*, 10:1874, June, 1937) report on the functional and structural changes produced by "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.) when injected into rats in varying doses over varying periods of time. The minimum lethal dose decreased with the weight (age) of the animal, varying between 35 mg./kg. for the older and 200 mg./kg. in the younger rats. This would be from 100 to 1,000 times per kilo the usual therapeutic dose in man. A tolerance to repeated doses was observed. With large sub-lethal doses excitement, mydriasis, erythrocytosis, leukocytosis and retardation of growth were effects commonly produced. The greatest non-toxic dose (i.e. that which failed to produce transient variations) appeared to be about 10 to 50 times per kilo the usual therapeutic dose in man. Animals which died following high, toxic doses showed various changes in the lungs, spleen, liver and kidneys. But repeated sublethal doses failed to produce any detectable lesions in rats. It was concluded, therefore, that there should be a considerable margin of safety in the proper therapeutic use of "Benzedrine Sulfate."

SUMMER DIARRHEA IN BABIES

Casac (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casac. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextrin-Maltose may safely be added to the formula and the Casac gradually eliminated. Three to six teaspoonfuls of a thin paste of Casac and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Children vary a great deal in their ability to talk. At six or seven months, most children can recognize their own names. At fifteen or eighteen months they usually have a fair vocabulary of two-word sentences, and by the time they are three years old, they can talk connectedly. Much depends on the effort made to help the child. One child is not intellectually superior to another merely because he learns to talk earlier.—*Pub. R. Bureau, Med. Soc. State of N. Y.*

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., September, 1937

Number 9

OBSTRUCTION IN HIGHER URINARY TRACT*

SPENCER A. KIRKLAND, M.D.
Atlanta

In referring to the higher urinary tract, one has reference to that part of the human anatomy of the genito-urinary system, lying between the orifices of the ureters in the bladder, extending up to and including the kidneys. A brief description of the normal kidney and ureter will augment one's appreciation of the pathologic conditions found in these organs.

The kidneys are two flattened glandular bean-shaped organs, located within the abdominal cavity, on either side of the vertebral column, behind the peritoneum. They measure approximately four and one-half inches in length, two and one-half inches in breadth and one and one-fourth inches in thickness. The right kidney is slightly thicker than the left, but the left kidney is longer. Their normal position is not fixed, the right being more movable. In women, their mobility is between 1.5 to 5 c.m.; in men about one-half this amount. The upper pole of the right kidney is about opposite the body of the twelfth dorsal vertebra; the left is at a slightly higher level.

Grossly, the kidney tissue consists of two layers, the cortex and the medulla. The latter surrounds the renal sinus and is made up of approximately thirty five conical shaped masses, known as pyramids. Their apices end in the form of papillae, projecting into the renal sinus at the beginning of a calix. Several of these minor calices unite to form a major calix, of which there are usually three. These major calices unite to form the renal pelvis. One should remember that the calices are subject to variations. The cortex is made up of a number of lobules, columnar in shape and extending from the medullary substance of the pyramids to the periphery.

The normal ureter is a flattened tube from 25 to 34 cm. in length with an average outer diameter of 4 to 5 mm., an average lumen of 1 to 3 mm. and extending from the outlet of the kidney pelvis about 7 cm. below the renal hilus to an angle of the vesical trigone. They extend downward and inward through the lumbar region into the cavity of the pelvis, across which

cavity their course is downward, forward and inward. For convenience of study the normal ureter may be divided in several different ways. A very simple method of division is *abdominal* and *pelvic*: the abdominal ureter extending from the junction of the ureter and the renal pelvis to the point where the ureter crosses the iliac vessels; the pelvic portion from the point of crossing to the floor of the bladder. Normally the ureters are constricted slightly at the ureteropelvic junction and at the middle of the abdominal portion and the ureterovesical area. The normal ureter consists of a muscular structure of outer and inner longitudinal, as well as a middle circular layer. The longitudinal layers appear uniform throughout, but the circular area present areas of hypertrophy which correspond to areas of constriction in the lumen. It has been advanced that these circular rings represent relay stations for the peristaltic waves that originate in the musculature of the pelvis of the kidneys and are influenced by the nervous mechanism of the ureters. In considering pathologic conditions in the ureters, one should not lose sight of the normal ureteral peristalsis, as well as its behavior under stimulation, irritation or manipulation with catheters.

Obstructions in the higher urinary tract are of various types. One may find a unilateral or a bilateral involvement or one may discover an obstruction in both kidneys. One kidney may be blocked with the ureter on the opposite side obstructed. Then, in some patients, both right and left ureters will be obstructed simultaneously.

For convenience I have divided obstructions of the higher urinary tract as follows: obstruction due to some *congenital* condition; those brought about by *pressure* on kidneys and ureters exerted by some lesion found in and around these structures; the obstruction caused by *trauma* of the kidneys and ureters; the obstructions traceable to *infection* and the ones due to *foreign bodies*.

Obstructions in the higher urinary tract have been studied over a period of years. The ancient Hindu writings refer to these conditions. Hippocrates recognized and gave a description of conditions of this type. From Hippocrates' time to the nineteenth century little was known of these conditions. Kidney and ureter surgery was considered with

*Read before the Medical Association of Georgia, Macon, May 12, 1937.

fear and trembling. The surgeon would cut down on the kidney only when there was marked swelling in the loins. Few nephrotomies were performed during the middle ages. Gustav Simon first performed a kidney operation in 1869, and Morris and Beck in 1880 and 1881, respectively.

In 1896 McIntire brought into use a crude form of x-ray for diagnosis of obstructions in the urologic tract. He made the first x-ray diagnosis of renal calculi. It is reported that he made this x-ray after an exposure of twelve minutes. A subsequent operation verified his findings.

Since the beginning of the nineteenth century considerable improvement has been made in the diagnosis and treatment of genito-urinary tract obstructions. Accuracy in the diagnosis of these conditions has greatly simplified the treatments, as well as added to the comfort of both the physician and patient. Within the last decade in making his diagnosis of obstruction in the urinary tract, the urologist has the advantage of improved x-ray facilities and modern laboratory and cystoscopic methods. A very valuable diagnostic procedure of recent discovery is the delineation of the urinary tract by the use of an opaque medium. In 1905 Voelcker and Von Lichtenberg outlined the ureter and kidney pelvis by using 2 per cent collargol and, in 1909, advocated the use of 40 per cent argyrol. The credit is due to Braasch for popularizing pyelography in the United States by the use of 10 per cent collargol. Thompson Walker introduced the procedure into England in 1913. Cameron was responsible for use of 13.5 per cent sodium iodide which is one of the most popular mediums for retrograde pyelography. The secret of success with this medium is to avoid over-injection. Instill the drug slowly, preferably by the gravity method, and give ample time for the medicine to drain out of the kidneys before removing the catheters. In 1922 Rountree and his associates at Mayo Clinic found that intravenous injection of 15 per cent sodium iodide faintly outlined the kidneys and bladder. The toxic effect of this drug given in this way made it unsafe for intravenous pyelography and numerous experiments followed by various urologists. Professors Lichtenberg and Binz, after trying

out a series of preparations, decided on iopax as an ideal preparation which was non-toxic in sufficient quantity for intravenous injection, was eliminated in the urine in high concentration and gave good visualization. In 1931 these men reported five different preparations for intravenous pyelography, among which are diodrast, neoiopax, and hipuran. All of these are popular at the present time. With all the improved methods mentioned, one should not lose sight of the fact that an accurate history is of paramount importance in making diagnoses of the higher genito-urinary tract obstructions.

Congenital anomalies which predispose to obstruction in the higher urologic tract are not uncommon to the urologist. Such findings as bifurcated ureters, ptosed kidneys, horseshoe kidneys, double kidneys and congenital ureteral strictures; in fact any condition of the kidneys or ureters in which there is poor drainage between the kidneys and bladder, may result in a partial or complete obstruction.

Obstructions due to trauma of the kidney and ureters are brought about in various ways. The ureter is usually free from ordinary traumatic accidents on account of its length, elasticity and protected position. When they do occur, it is often difficult to diagnose them. With the use of non-toxic roentgenographic media and the aid of the fluoroscope one may detect a leak in the ureter without danger to the patient. A few rare cases of gunshot wounds and stab wounds of the ureter have been discovered by this method. Surgical trauma to the ureters will cause obstruction in the higher urinary tract. In certain gynecologic operations it is easy to subject the ureters to injury. Obstetrical injuries are encountered from instrumental labors. The ureters are traumatized by the instruments or from pressure of the child's head, due to delayed use of forceps. One in operating may interfere with the blood supply of the periureteral sheaths and in this way cause a necrosis.

Inflammation of a ureter is usually secondary. In cases of pyogenic cystitis one will find a thickening and tenderness of the ureter. In some cases of cystitis following a tuberculous kidney, one will oftentimes find a thickening of the ureter on the side of the



FIG. 1
Ureterocele with constriction in the ureter causing hydronephrosis and impaired kidney function.



FIG. 2
Congenital anomaly with bifurcation at junction of middle and lower third of the ureter. The constriction of the ureter at the point of bifurcation causing hydronephrosis and impaired function of the kidney.

tuberculous kidney, as well as a thickening of the opposite ureter.

Within the past decade a number of ureteral neoplasms have been reported obstructing the urinary tract. Joly in 1933 reported 133 cases of this type. Over the same period he reported 337 renal pelvic tumors. Neoplasms of the lower part of the ureters have been recognized as extensions from tumors of the bladder, prostate and seminal vesicles.

Cysts of the ureter may result in obstruction of the higher urinary tract, the end result of which is hydronephrosis. These cysts are invariably associated with inflammatory and suppurative conditions of the bladder, ureters and pelves of the kidneys.

A ureterocele may cause intermittent obstructions which often results in complete retention of urine. Since the advent of the cystoscope these conditions have been more frequently discovered. One may find them unilaterally or bilaterally.

One invariably finds the sheath of the ureter invaded by infection which comes from a ruptured appendix. This condition oftentimes results in a hydronephrosis. It is not uncommon to find this same condition of the kidney in connection with a fibroid tumor of the uterus. In fact, almost any pathologic

condition within the abdominal and pelvic cavities may result in pressure on the ureter sufficient to block the flow of urine and cause a hydronephrosis.

Practically all abnormalities of the kidneys and ureters which result in poor drainage from the kidneys to the bladder predispose to the formation of stones, which foreign bodies are responsible for the bulk of obstructions in the higher urologic tract. Stones are found unilaterally or bilaterally. The latter are not so common but when found are considered dangerous if left untreated, as such conditions are liable at any moment to give rise to a calculous anuria. Bumpus and Scholl found only 8 cases of bilateral calculi in 640 patients operated on at Mayo Clinic.

It would be quite lengthy to even briefly discuss the numerous theories relative to the etiology of calculi and the part many writers claim is played by diet, climate, age, race, etc. The discussion on the diathesis theory would fill a book. If one will exclude the very rare cystin stones which are in a class to themselves and usually conceded to be the result of diathesis, the conclusion will be made that lithiasis is not a familial disease. In my estimation, long continued illness plays a great part in the formation of calculi, which so

often obstruct the higher urinary tract. When a patient is confined to bed over a long period, stones are invariably found in the kidneys. Fracture cases that remain in one position for several months often have operations for stones following the treatment of the fractures. Osteomyelitis cases are prone to develop stones. I have found a number of stones following war wounds where the wound was a gunshot fracture. One also has stones following infected teeth and long continued illnesses of typhoid. In my opinion, in bedridden patients the position plays a great part in the formation of calculi. When a patient is lying on his back, the whole of the pelvocalix system of both kidneys is badly drained and it looks reasonable to suppose that such defective drainage would predispose to the formation of calculi. Stones are more prone to form in infected areas. Infection is not paramount as they form in non-infected areas. One might go on and on enumerating things which have been claimed to influence the formation of lithiasis; after all, most of them are hypotheses. The conclusions reached from all these theories furnish a fertile field for more research.

Calculi which have a tendency to block the upper genito-urinary tract are of various sizes and shapes. One may find the small circular shot-like stones, again one may encounter the oval cockle burr type, or they may be irregularly shaped of various sizes to the staghorn calculi which often fills the entire pelvis of the kidney. It is not always the largest stone that renders the patient most uncomfortable. Very often small stones lodged in the ureters will cause the patient to use more profanity than a large stone. Neither is it the stone that causes the most suffering that produces the most damage to the ureters or kidneys. Often silent stones will impair the function of the kidneys before the patient is aware of any kidney or ureteral disease.

One practically always finds infection secondary to bilateral blockage by calculi. The most common organism found from calculous ureters and kidneys is the staphylococcus albus. One finds next bacillus coli, the tubercle bacillus, or the pneumococcus. There may also be found the pneumobacillus of Franckel. In dealing with infections due to stones one should determine whether the

urine from the infected kidney is acid or alkaline. An alkaline infection is considered more dangerous as the stone will become coated with phosphates, will grow more rapidly, is more apt to recur and will obstruct the urinary tract more quickly. This, of course, is not an infallible rule.

In dealing with obstructions of the higher genito-urinary tract, one has to deal with a variety of symptoms. Obstructions in different locations in the kidneys and ureters may present varied symptoms. One may often have patients with obstructions located in the same areas and yet have dissimilar symptoms. So each patient is more or less of a law unto himself or herself. Often small stones lodged in the ureters will cause more pain than large ones in the kidneys. The urine in calculous kidneys and ureters will usually show some blood cells. The blood is found at times only on microscopic examination. The temperature varies from a normal to a high degree. Chills may follow a blockage and there may also be nausea and vomiting. Should bilateral calculi be left untreated, sooner or later one will discover some impairment in the kidney function. Infection which is practically always present in bilateral calculi makes the prognosis worse and hastens the destruction of the kidneys and ureters. It is usually conceded that one rarely finds bilateral aseptic calculi. Out of 13 cases reported at St. Phillip's Hospital all the infections were bilateral. In a series of 36 cases of bilateral calculi, 31 of these were infected on both sides. Usually the infection occurs in one kidney before the other. In other words, one infected kidney with a stone will infect the other and predispose to stone formation on the opposite side.

One is able to make earlier and more accurate diagnoses in recent years. This, of course, means much to the surgeon as well as the patient. With the aid of the x-ray one may discover an impacted calculus in one ureter with an old calculus-renal destruction on the opposite side. One may tease the stone out of the ureter with the operating cystoscope by passing catheters and instilling olive oil up this side. If these measures do not remove the stone, a stone dislodger may be used. This procedure may fail to remove some stones but will no doubt loosen the obstruction and establish drainage from the kidney to the



FIG. 3
Impaired function of the kidney and tortuous hydroureter due to obstruction in higher urinary tract.



FIG. 4
Obstruction in higher urinary tract which resulted in almost complete destruction and loss of function of both kidneys.

bladder, which will lessen the danger of damage to the kidney on this side. If the ureteral stone is removed, then the kidney function will improve in order that the opposite kidney may be operated on with far less danger to the patient.

In treating any obstruction of the higher urologic tract, like treating other diseases, one should try to remove the cause. Usually the treatment is operative. Small stones of the kidneys and ureters have been removed in numbers through the cystoscope. After removal of stones by this method, one usually notices relief of pain, as well as improvement in kidney function. Getting rid of the obstruction caused by stones is just half the battle, however. One should continue the treatment until the infection in the kidneys and ureters has been entirely eliminated. This is easier said than done. With persistence, gentleness, and patience on the part of the doctor, coupled with strict cooperation of the patient, it may be accomplished. One aids in bringing this about by first passing different sized catheters up the ureters to establish good drainage from the kidneys to the bladder. In some cases a lavage of the kidney pelvis will help. For instillation into the kidney, one may use such antiseptics as mercurochrome, argyrol, silver nitrate or acriflavine. No

treatment chart can be compiled which will fit all cases of obstruction. Every case is a law unto itself. The type of operation and the treatment procedure will depend on the type of case with which one is dealing. Obstruction in the higher urinary tract will result in anything from a mild pyelitis or ureteritis to a complete destruction of kidneys and ureters. A patient may live for a number of years with infection or partial obstruction in the kidneys and ureters and by the time the symptoms of renal failure have become apparent, it is often too late to remedy the condition. In my opinion, if it is necessary to sacrifice one kidney in order to save the other, this should be done. Often a man or a woman with one kidney that is healthy is in a far better condition than one with a chronic infection on one side and a non-infected kidney on the other.

Conclusions

In considering obstructions of the higher urologic tract, one should have a clear mental picture of the normal kidney and ureter.

One will greatly lessen the operative mortality of obstructions in the higher urinary tract by making an early, accurate diagnosis. Recent improved urologic facilities have made this possible.

Calculi are responsible for the greater number of higher urinary tract obstructions. One practically never finds bilateral aseptic renal or ureteral calculi.

The surgeon's battle is only half completed after removal of stones from the kidneys and ureters. One should continue the patient under observation and treatment, if possible, until the infection is cleared.

A patient with one healthy kidney is in far better condition than one with a severely chronically infected kidney on one side and a non-infected kidney on the other.

DISCUSSION ON PAPER OF
DR. SPENCER A. KIRKLAND

Dr. J. C. Keaton (Albany): I am very sorry that Dr. Kirkland did not have an opportunity to finish reading his paper before I discussed it. He will probably conclude his paper by outlining, as he did in the beginning, the fact that we should have a very clear mental picture of a normal kidney and ureter with the variations we find in the pelvis and ureter that are still normal. These conditions of upper urinary tract obstructions are conditions that we very frequently find late. I think if we could contact patients earlier and make an early diagnosis we could prevent a great deal of damage taking place in the kidney by finding obstructive lesions in the ureter, kidney or in the calix. We have obstructive lesions in the kidney from time to time, mostly unilateral. That is a statement that is made by a large number of urologists who see these cases, but in the section that I come from, in South Georgia, in the stone-forming section, it is not unusual to find bilateral stone obstructions and bilateral hydronephroses, and when we find a bilateral lesion or bilateral hydronephrosis, the principle of renal counterbalance is completely changed, and in dealing with these cases surgically we have to take that into consideration, and when we operate on a hydronephrosis, on one side, and the kidney is restored to function, we must not wait too long if we intend to offer any relief on the other side. If we wait for this kidney to re-establish itself it will take over the complete function and the subsequent action of the other kidney will not be satisfactory.

In the upper urinary tract obstructions we very frequently see hydroureters. The obstructive type of hydroureter that we see usually extends not only into the ureter but if it is there long enough the calices are affected, and the other type of hydroureter we see is of neurogenic origin and dilatation of the ureter will extend to the pelvis. This remains practically a straight, smooth tube.

Of course the treatment of the hydroureter is to relieve the obstruction.

Dr. Ralph N. Johnson (Rome): For the past 4 or 5 years we have heard so much about transurethral resection and lower urinary obstruction that it's a real

pleasure to listen to a paper on obstruction higher up the urinary tract.

We all know that high obstructions may be present from an early age and give no symptoms until middle life when, due to some intercurrent infection such as gonorrhea, coryza, sinusitis, bad teeth or constipation, an acute pyonephrosis may set in. This type is the congenital obstruction that Dr. Kirkland mentioned and is usually caused by ureteropelvic bands, aberrant vessels or stricture. Early use of cystoscopy and pyelography will discover this lesion early. Don't wait and founder on conservative medical treatment of potassium citrate, urotropin, etc. If surgery is indicated make it surgical prophylaxis and thereby save the kidney before it is destroyed.

Kinked ureters are usually associated with ptosis, and in many, aberrant vessels are found at the lower pole. In ptosis two types of pain are found: (1) pedicle pain from pulling and (2) obstructive pain from distention of the pelvis. In differentiating this, retrograde distention of the renal pelvis through a ureteral catheter will reproduce the pain frequently.

Higher urinary tract obstruction frequently masquerades as a gastro-intestinal disorder. A cyst of the upper pole or an acute calculus pyelonephritis on the right side may simulate acute disease of the gallbladder.

High urinary obstruction, by producing stasis, "enriches the soil for infection." A chronic pyelonephritis may be the cause for a recurrent cystitis. So in lower urinary tract infections always consider the upper.

Hugh Cabot of the Mayo Clinic does a nephrostomy frequently in these high obstructions in preference to drainage through the renal pelvis claiming that there is (a) definitely better drainage and (b) no danger of a urinary fistula.

Georgia has the world's championship on higher urinary tract obstruction. On Jan. 14, 1937, some Atlanta doctors removed a kidney stone weighing 3 pounds and 7 ounces, as large as an ordinary grapefruit, from a man and he's still alive!

Dr. Frank K. Boland (Atlanta): I should like to call attention to two very simple emergency procedures in the treatment of obstructions of the urinary tract which I have used a few times successfully.

A great many of these cases of renal colic are due to a prosoed kidney. You know the condition we have called Dietl's crisis. Sometimes if you stand the patient on his head and hold him up by his feet, you can loosen the obstruction by straightening the kidney out, thus giving the patient some immediate temporary relief.

Another valuable emergency procedure, I think, is the use of 1 cc. of surgical pituitrin, which acts on the smooth muscle fiber of the ureter, just as on smooth muscle fiber elsewhere. I have seen relief afforded by the administration of this drug, in which it may cause a small calculus to pass down the ureter or loosen a plug of mucus or a blood clot.

These are two methods of treatment which may be useful in an emergency.

Dr. W. F. Reavis (Waycross): I could not let a paper of this type go by without making some few

remarks. I do not know of a particular subject that should be discussed before a general group more than the high urinary obstructions. We have a condition of a chronic nature that is produced over a long period of time and so often diagnosed and spoken of as chronic lumbago, which Dr. Kirkland ably brought out, in which we have a congenital type of obstruction in the ureter or the kidney.

My principal thought in bringing something more to you than the doctor has was about three types of obstruction that we run into occasionally, in which the general man is responsible for one of them. The use of pessaries—all of you gasp, now—the use of some types of pessaries, leaving those in place over a long period of time, is one of the greatest causes of the ureteral obstruction in the female that I know of. I recently saw an elderly lady that had a pessary placed in the vagina, to support the uterus, of course, and the area around it had become quite edematous and inflamed. It was removed by a surgeon, and when the surgeon removed this pessary the pain in the side, of course, was immediately relieved, and urine passed through the vagina. Those are some of the conditions, and if you would realize and think of it you would understand fully just what I mean by that.

Another matter that the doctor brought up a minute ago was in regard to prostatic obstruction. I was very glad he mentioned that.

We do have a type of ureteral obstruction produced by an enormous prostate protruding about the arch.

Another thing is bifurcation of the ureter, above the bladder. These conditions are very hard to diagnose, because of the fact that we have only one orifice and one ureter entering into the bladder and it is difficult to visualize any type of obstruction in one or both bifurcations of those ureters by intravenous pyelography.

If you have an obstruction over a period of days in either pelvis, a bifurcation, at least, of the ureter entering into one or the other of the pelves of the kidney, naturally that portion of the kidney and that pelvis drains, and the function is going to be destroyed and you do not get any shadow in the intravenous dye. That is one reason we do not pick up those conditions.

Occasionally, when you have a suspicion of those things, you can pass a catheter up the ureters, and one ureteral catheter will go to one pelvis and one to the other. I saw two cases last year; the patients were extremely ill. But with the patient who has no urinary symptoms other than a dull aching in the back, repeated urinary findings being absolutely negative, with probably a very faint trace of albumin, you can always be suspicious of some type of obstruction. That type of kidney is usual. One or the other of the pelves of that kidney is extremely small. The isthmus from the major calices is extremely small, as a rule, and you can have pain in that kidney due to the extreme smallness of the isthmus draining that part.

Dr. Spencer A. Kirkland (Atlanta): In conclusion, I would like to present a few slides. I am sorry time does not permit us to dwell on each case. There is one case in particular I would like to discuss briefly.

This patient had had one kidney removed two years previously. A large stone developed in the remaining kidney and he was taken with an anuria. He had a non protein nitrogen of 150 and creatinine of 10, was nauseated and unable to retain food or liquids. A No. 6 catheter was passed to the pelvis of his kidney and left in place. He was given 1000 cc. of saline and 2½ per cent glucose intramuscularly each night and morning for 3 days. His output of urine gradually increased after the first day. After remaining in the hospital for a week, his non-protein nitrogen dropped to 80 and his creatinine to 4.3. He was prepared and given an anesthetic and the stone removed from his kidney. He made an uneventful recovery.

FUNCTIONAL DISTURBANCES OF THE GASTRO-INTESTINAL TRACT*

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Macon

The privilege of presenting before this Association a subject of my own selection is greatly appreciated. My apparent boldness in choosing one so likely to prove uninteresting to a group representing every phase of medical practice finds support, first, in the large number of patients who seek medical advice because of gastro-intestinal disturbances and in whom no pathologic lesion of the alimentary tract can be found. Crohn¹ states that the number of functional cases far outweigh all cases of ulcer, of gallbladder diseases and of cancer combined and that in the majority of these the cause lies outside the gastro-intestinal tract. The ramifications of this remote and diverse etiology invades the field of every speciality. It is therefore obvious that a close co-ordination of effort and understanding on the part of each of us is essential for accurate diagnosis, and for successful treatment. But the majority of us are not specialists. The problem these patients present to the physician who by choice or of necessity must rely upon his own resourcefulness alone to diagnose and treat all who come his way is recognized. Most of these patients usually consult first their family physician. In addition to these considerations there is the stimulus provided by experience gained in my own practice. For several years I have been impressed by the large number of patients I have classified in this group. Many of these had

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

consulted other physicians but no demonstrable organic lesion could be found. All efforts to assure them that they would recover had failed because it is not enough to tell a patient that he has no tumor, that the membranes of his stomach and intestines are neither inflamed nor ulcerated, and stop with that. One must go a step further and give instead of negativism only a convincing positivism also, founded upon a thorough study of each individual. No practicing physician should be content with an anatomic diagnosis or be satisfied because he can give a name to a disorder. We should desire a complete insight into, and understanding of, the perversions of physiologic functions so that we may be able to correct any aberration thereof.

There is an even larger group of patients in whom digestive complaints are present in addition to the chief complaint which brings them to their physician. A careful history, skillfully interpreted, with due consideration given to all complaints, may prevent the embarrassment of having the patient return for further advice because his indigestion had been overlooked.

When we realize that normal digestion proceeds with such smoothness and efficiency that we are unaware of its progress it is but natural that when it is accompanied by discomfort the sufferer will seek medical relief. Failing to get this from his physician, it is no wonder that he turns to nostrums so glowingly advertised. The virtues of remedies extolled over the radio, timed to be heard about one hour after the evening meal, at the height of the sufferers' discomfort, appeals to that vast multitude whose complaints we so often regard too lightly. I emphasize, that a little heartburn, a sensation of fullness or an eructation may impress one individual just as much as somatic pain disturbs another.

This state of affairs is not due to ignorance in the field of gastro-intestinal diseases. Gastro-enterology has shared in the acceleration of all medical and surgical progress which has been so spectacular in the past three decades. With the fundamental discoveries at the turn of the century as a basis of the scientific attainments in the field of medical knowledge, and with the technical improvements in diagnostic aids so brilliantly conceived and so skillfully perfected in recent years, we have

an adequate armamentarium. Given, a patient with the complaint, an investigative attitude on our part, and adequate technical aids, we need only the patience and determination to use them and our results will usually be satisfactory. I do not wish to convey the impression that the science has replaced the art. After utilizing the science at our command we can more successfully resort to the art. Either without the other may lead to a failure to attain our objective.

Avoiding generalizations, further consideration must be limited to the disturbances of the secretory and motor functions of the gastro-intestinal canal. The secretory functions can be determined by gastric analysis. We are interested chiefly in the acid content, both free hydrochloric and combined acids. Although no fixed figures have been agreed upon as representing the limits of normal, sufficient data have been contributed for practical application. A very low free hydrochloric acid content or an achlorhydria is always an important finding. Percentages above the generally accepted normal are of little or no importance. I would stress the point that achlorhydria is not a diagnosis but a symptom or a part of a syndrome and must be regarded as such until definite proof of some underlying disease is forthcoming. Indeed, this finding alone may lead to the discovery of early carcinoma, primary anemia, hyperthyroidism, sprue, or diverticulitis. It is my practice to use the Ewald test meal, Rehfuess tube and usually the fractional method. If done correctly, the fractional analysis will also give a reliable and valuable estimation of the emptying time of the stomach.

Entering now into the broader field of motor disturbances we encounter more perplexing and often vexing problems. Since it is our objective to restore harmony and rhythm where disorder prevails, we must acquaint ourselves with the actions of the various sphincters and of the motility, delay, peristalsis, antiperistalsis, spasticity, or atony of all segments of the gastro-intestinal canal. Normally, these functions proceed rhythmically and with unerring co-ordination, by virtue of the superb interplay of the stimulating vagus or the parasympathetic system and the inhibitory sympathetic system. Any impairment of these functions must be interpreted

as an "unbalancing" of the autonomic nervous system. Without the opaque meal, fluoroscopy and radiography we could only surmise these incoordinations. So important are these diagnostic aids I regard no gastro-enterologic examination complete without their use. It is my hope that the cost of these procedures may soon be placed within the reach of every patient and that more of us will become reasonably proficient in their interpretation.

Having arrived at this point by patient labor and much thought where shall we next turn to uncover the hidden causative factors? From the standpoint of frequency and also of the difficulty they present, I think the "nervous dyspeptics" rank first in importance. Although the autonomic nervous system is automatic in its daily activity and is not within the conscious control of the higher centers it is not impervious to psychic traumas which lead to the definite neuroses. We are left with the history only to guide us, aided by whatever acumen, experience and intuition we may possess. First, we must be able to recognize the type of individual we are dealing with. Usually, he is timid, afraid, lacking in self-confidence; subject to emotional instability; or reticent and suppressed, unable to grasp the hard facts of life and unwilling to accept them, uncertain of the past, more worried about the future, unable to fit himself into the harsh inequalities of society and out of harmony with the world about him. Unequal to his seemingly unsurmountable problems he becomes an easy prey to a neurosis. The physical build of the individual is usually characteristic. More often slender, only fairly well nourished, of the enteroptotic constitution, with cold moist palms, rapid pulse, anxious mien, he possesses a hypersensitiveness to pain. His conduct will often furnish the first suspicion; his anxiety, his distrust of physicians, his conviction that he has an organic disease no one has been able to find, that he is badly misunderstood and, above all, his expressed desire to go to any extreme to get relief, characterizes him as a neurotic. The important role of heredity must not be overlooked. During the past few years the unfavorable phase of the economic cycle was a direct cause of many physical and psychic collapses.

There is a smaller group of cases which we cannot group with the neuroses. Participating in the symposium on hypertension before this society four years ago I called attention to the digestive disturbances associated with hypertension. Gaus² stressed the frequency of gastro-intestinal symptoms due to conditions within the pelvis. Analyzing the mechanism of interrelations of gastro-intestinal and pelvic diseases, he names four possible relationships that come into consideration; namely, the anatomic, the neurologic, the chemical and the accidental factors. He emphasizes that a pelvic as well as rectal examination constitute an integral part of every well conducted gastro-intestinal examination. Disturbances associated with hyperthyroidism, hypothyroidism, early myocardial failure, coronary thrombosis, pulmonary tuberculosis, deficiency diseases, arthritis of the spine and disease in the genito-urinary tract are frequently encountered and these primary diseases must be kept in mind.

I regret that the important function of elimination cannot be more fully discussed. Constipation in its final analysis is almost always a functional disorder. Deducting the over-purged and the under-evacuated from our clientele there is left a definite minority. Less frequently, exhibitions of diarrheal or dysenteric complaints are functional, having as a causative factor an achlorhydria or a hypermotility. Normal elimination is dependent upon residual bulk, proper tone of the colon, the consistency of the mass and so frequently that important factor, habit time. It is my hope that I have impressed upon you the fact that indigestion is not an entity; that more often this complaint means a disturbance of function only; that every patient consulting you because of indigestion is entitled to a thorough study and complete physical examination, and that the causative factor can usually be found.

Especially do I discourage the indiscriminate use of alkalies and purgatives, usually given unscientifically and with a large measure of hope. A thorough understanding of the normal physiology of the gastro-intestinal tract, a careful history eliciting information relative to impairments thereof, a complete physical examination including a gastric analysis, fluoroscopic and radiographic studies

to confirm or disprove your suspicions, will almost invariably enable us to restore order where disorder prevails.

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DISCUSSION ON PAPER OF DR. W. W. CHRISMAN

Dr. Trimble Johnson (Atlanta): I can only differ with Dr. Chrisman on one small point. I have gone back to the old type stomach tube, and I believe that the estimation of mucus in the stomach is almost as important as the estimation of acid.

A year and a half ago I heard one of the best known clinicians in the United States make the remark that we in this country were ten years behind Europe in our knowledge of functional gastric disease, and he also gave theories as to the cause of that deficiency. I have claimed for fifteen years that we were ten years behind Europe in our knowledge of those conditions, and I think I know the cause of it. A misstatement or a misinterpretation by a prominent man can do irreparable harm. There were two slogans popularized here about twenty years ago that put us ten years behind. One of them was, that there are only two diseases of the stomach, ulcer and cancer, both surgical. The intent of that slogan was to call attention to the acute surgical conditions that were being overlooked. Another slogan put out by a well known physician in this country was that the gastric analysis had no diagnostic value. The intent of that, I think, was to keep various members of the brotherhood from ruling out a cancer or ulcer on a gastric analysis. But the end result of those two slogans was to cause a practical cessation of interest in gastro-enterology in this country. It got to where you were a little bit "sissified or old-maidish", to even consider anything except ulcer or cancer in the stomach.

There was a doctor about four or five years back who, in trying to prove that a gastric analysis had no diagnostic value, examined two or three thousand students, apparently healthy, and found 20 per cent having achlorhydria. I claim that an unbiased study of those same several thousand students would have shown 20 per cent with tuberculous infection, probably 30 per cent with chronic tonsillitis, and certainly he would have had to observe that 20 per cent of achlorhydrias for twenty or thirty years before he would know that it meant nothing.

I think the gastric analysis has plenty of diagnostic value. I will always contend that I found one tape worm by gastric analysis. This patient showed normal test meal findings and normal stool findings, but the x-ray showed a rapid emptying of the small intestine and cecum. I spent a week or two eliminating tuberculosis, a little while eliminating hyperthyroidism, a week or two studying nervousness, and finally by elimination narrowed down to an intestinal infection. After failing to relieve with a few injections of neo-arsphenamine, an anthelmintic was given, and out came a twelve foot tape worm.

Had a gastric analysis not been done, I would still be treating this patient with diet and digestive agents.

Dr. W. W. Chrisman (Macon): I wish to thank Dr. Johnson for his discussion. In closing I wish to say that I am not in sympathy with the idea that the problem presented by a dyspeptic is easy. After we have used all the diagnostic aids we have, and all the experience we have gained, we are going to make mistakes. We are going to classify some cases as functional when there is an organic disease present which will show up later.

I regret that the title of my paper includes so much and the time was so short that I could not go into some phases more fully.

ACUTE HEMORRHAGIC NEPHRITIS IN CHILDREN*†

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Atlanta

Acute hemorrhagic, or glomerular nephritis, is most often seen in young children because infections of the pharynx, throat and tonsils are apparently responsible for this condition. Pathologically, this disease involves the glomeruli of the kidney. It is difficult, except on postmortem examination which includes histologic studies, to differentiate the lesions because there may be damage to the tubules as well as other tissues of the kidney.

Twenty-one patients with this condition were seen at the Grady Hospital in the Negro children's ward. My cases are important from the standpoint of diagnosis and treatment.

ANALYSIS OF CASES

Age and Sex: There were 16 males and 5 females. The youngest patient was 5 weeks of age, and the oldest 10 years of age.

Physical Examination: Nineteen of the patients had edema which was usually found about the face, eyes, feet and ankles; occasionally it was found in the abdominal cavity. Two patients had convulsions; one complained of marked dyspnea. Thirteen patients had severe tonsillitis or pharyngitis. Ten patients presented impetigo contagiosa. One patient was admitted to the hospital with bronchopneumonia, and one with otitis media and cervical adenitis.

Temperature: The temperature of these patients was not high, occasionally rising to 103° in the rectum in a few individuals. The average temperature was between 98.5° and 100.4°, the fever usually disappearing in about one week. Pulse rates usually fluctuated according to the height of the temperature.

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

†From the Pediatric Department of Emory University School of Medicine and the Colored Children's Ward of Grady Hospital, Atlanta.

Blood Pressure: The blood pressure is helpful in diagnosing acute hemorrhagic nephritis. Most of the patients here reported had an average pressure of 156 systolic, and 108 diastolic. About fifteen days were required for the pressure to seek normal limits, which usually ranged from 116 systolic to 64 diastolic.

Weight: Most patients lost edema rapidly. The average loss of weight during the first week was three pounds and one ounce; during the second week the loss was about two pounds and four ounces.

Blood Chemistry: While most observers have found the blood constituents increased in this condition, my experience did not bear out these facts. The non-protein nitrogen ranged between 25 and 40 mg., and the creatinine around 1.5 to 2 mg. In only one patient, who was five weeks of age and who died shortly after arrival in the hospital, was the nonprotein nitrogen as high as 300 mg.

Urinalysis: The urines of practically all patients showed a large amount of albumin, with occult blood or blood microscopically; occasionally casts were found. All abnormal urinary findings disappeared, usually before the patients were discharged from the hospital.

MORTALITY

There were three deaths in my series of 21 cases.

Case 4. Male, aged 9. Patient was admitted to the hospital with symptoms of vomiting, edema and fever. Physical examination showed general edema, impetigo and hypertrophic tonsils. Temperature was 100°, pulse rate 100; blood pressure 180/124. Complete anuria occurred and the patient died. Necropsy revealed an acute hemorrhagic nephritis.

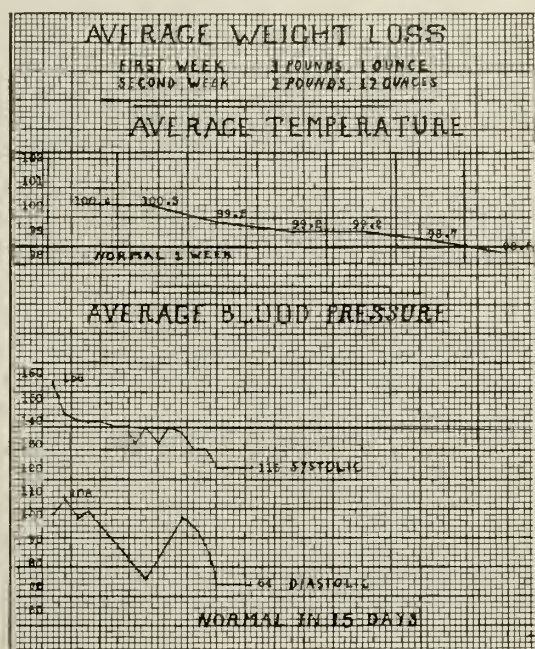
Case 10. Female, 5 weeks of age, became fretful, and developed fever and anuria during past 24 hours. When the patient arrived at the hospital the physical examination was negative. Rectal temperature 99°; systolic blood pressure 140; and N.P.N. 300 mg. The patient died soon after she was admitted. Necropsy showed acute hemorrhagic nephritis.

Case 20. Male, aged 7 months. This patient had been ill for eight days previous to his arrival in the hospital. He refused to nurse, was fretful, had a dry cough and was drowsy. He had a temperature of 103°, marked mucous discharge from the nose, bronchial breathing, and a distended abdomen and enlarged liver. Neither blood pressure nor blood chemistry was recorded. He died and the necropsy revealed bronchopneumonia and acute hemorrhagic nephritis.

TREATMENT

It is strange to see the large number of ambulatory patients with acute hemorrhagic nephritis. It is my experience that rest in bed is one of the most important aids to relieve and improve this condition. Occasionally these patients need sedatives. Phenobarbital can be given in the doses of $\frac{1}{2}$ grain hypodermically, and morphine in doses of 1/64 grain to 1/16 grain.

I do not believe that diet plays an important part in the treatment of this condition. My diet consisted primarily of low protein and salt-free foods. The average patient received 2100 calories of food in 24 hours consisting of 260 Gm. of carbohydrates, 100 Gm. fat, and 40 Gm. of protein. Five-tenths gram of salt was given daily.



If the patients excreted urine without difficulty, a full diet was given.

Case No. Sex Age	Symptoms	Physical	Etiology	Tem.	Pulse	B.P.	Blood Chem.
Case No. 1 Male 5 years	Edema face, eyes, feet and ankles. Vomiting.	Dyspnoea. Edema face, eyes, scrotum. Tonsils large and red. Heart enlarged and systolic murmur present.	Tonsils.	100	106	160/90	*N.P.N. 25 Sug. 90 Creat. 1.5
Case No. 2 Male 5 Years	Short of breath. Convulsions.	Convulsions. Throat red. Tonsils red and large. Heart enlarged. No edema.	Tonsils.	104	94	170/110	*N.P.N. 75 4 days later was 23.
Case No. 3 Female 4 Years	Nosebleed. Swelling face, legs, feet, ankles.	Edema eyelids. Heart enlarged and soft; systolic murmur present. Impetigo.	Impetigo	99	100	160/110	*N.P.N. 75 Sug. 66.6 Creat. 1.2
Case No. 4 Male 9 Years	Vomiting. Edema. Fever.	Tonsils enlarged. General edema. Impetigo.	Tonsils and impetigo.	100	100	180/124	
Case No. 5 Female 8 Years	Edema. Frequent urination. Anorexia. Short of breath. Vomiting. Unconscious.	Edema face and eyes. Slight edema of feet and ankles. Breath foul and throat red. Tonsils red and large. Impetigo.	Strep. throat or impetigo.	97	160	180/110	*N.P.N. 31.5 Sug. 133 Creat. 1.5
Case No. 6 Male 2 Years	Impetigo two months.	Edema face, eyes, hands, feet and ankles. Abdomen distended. Impetigo.	Impetigo.	99	100	132/90	*N.P.N. 37.5
Case No. 7 Male 3 Years	Mild cold. Edema. Weakness. Rapid breathing. Anorexia. Pain in abdomen.	Irritable. Scattered im- petigo. Edema. Tongue coated. Abdomen dis- tended. Tender- ness both flanks.	Impetigo	100	120	160/110	*N.P.N. 30 Sug. 100 Creat. 1.5
Case No. 8 Male 9 Years	Edema. Gained weight rapidly.	Edema. Tonsils large and red. Heart large. mitral murmur. Tenderness both flanks.	Tonsils and throat.	103	116	138/88	*N.P.N. 46 Sug. 90 Creat. 2
Case No. 9 Male 6 Years	Edema.	Edema. Tongue coated. Impetigo.	Impetigo.	100	110	160/112	*N.P.N. 27.2 Creat. 1.3
Case No. 10 Female 5 Weeks	Fretful. Fever. Anuria 24 hours.	Negative.		99	140		*N.P.N. 300

* N.P.N. indicates nonprotein nitrogen.

Edema may be treated as follows: For a few days fluids are limited to 500 to 600 cc. daily. It is important to administer magnesium sulphate, one-half ounce, every four hours until the stools become watery. Hypertonic liquids by mouth, and hypertonic saline enemas are useful. Magnesium sulphate may be given intramuscularly, 1 to 2 cc. of 25 per cent solution for each ten pounds of body weight. Concentrated glucose, 50 per cent so-

lution, may be given intravenously. While glucose may not have a diuretic effect, I believe it aids materially in keeping up the patient's nutrition and also helps the blood volume. Glucose probably aids in clearing the blood in the urine. Hypertension can best be improved by rest in bed, sedatives by mouth or intramuscularly, glucose intravenously, and especially by the administration of magnesium sulphate intramuscularly.

Case No.	Urine	P.S.P.	Duration	Results
1.	Albumin. Blood. Occasional pus cells.	65 per cent.	Ill 9 days. Hospital 13 days.	Improved.
2.	S. G. 1.012 Albumin. Few red cells. Negative 16 days.		Ill 26 days. Hospital 20 days.	Well.
3.	S. G. 1.013 Albumin. Occasional pus cell. Too many red cells.		Ill 20 days. Hospital 23 days.	Improved.
4.	Anuria.		Ill 8 days. Hospital 2 days.	Death.
5.	S. G. 1.022 1.010 Albumin Many red blood cells. Negative 7 days.	15 per cent.	Ill 11 days. Hospital 13 days.	Improved.
6.	S. G. 1.001 Albumin. Casts.	15 per cent.	Ill 9 days. Hospital 23 days.	Improved.
7.	S. G. 1.010 Albumin. Many red blood cells. Few casts. Negative 9 days.	25 per cent.	Ill 8 days. Hospital 15 days.	Well.
8.	S. G. 1.018 Albumin. Few red blood cells. Negative 13 days.	50 per cent.	Ill 18 days. Hospital 26 days.	Improved.
9.	S. G. 1.030 Albumin. Many red blood cells.	70 per cent.	Ill 11 days. Hospital 13 days.	Well.
10.	Anuria.		Ill 4 days.	Death.

S. G. indicates specific gravity; P.S.P. phenosulphonphthalein.

If the patient has convulsions one may treat as follows: (1) Tepid sponge bath; (2) saline enema; (3) magnesium sulphate; (4) spinal puncture; (5) sedatives: morphine intramuscularly; sodium phenobarbital gr. $\frac{1}{2}$ hypodermically; sodium amytal gr. $\frac{1}{2}$ hypodermically; ether, 8 cc. in 2 ounces of olive oil by rectum.

Occasionally transfusions are of some aid in the treatment of hemorrhagic nephritis. Diuretics apparently are of no great value. When the tonsils are inflamed or infected they should be removed. If impetigo persists it should be treated until all lesions are healed.

PROGNOSIS

Of the 21 patients, 9 were discharged as well and 9 as improved. Three died in the hospital. By the term well, I mean a normal blood pressure, normal temperature and a urine which is normal microscopically. When

patients were improved the urine still showed a few red blood cells and casts on microscopic examination.

Many writers question whether these patients recover or progress to a subacute or chronic nephritis. Thomas Addis¹ followed such cases many years and studied especially the number of formed elements in the urines of his patients. He believed that many patients continue to have a nephritis and on that basis explains the etiology of chronic kidney disease. Boyle and Aldrich² have recently reviewed a study of 250 patients in whom clinical recovery apparently followed acute postinfectious nephritis. Quantitative determinations were made of the constituents of the urines of 25 of their patients from periods of one-half to eight years. They concluded that the children who had recovered clinically from acute infectious hemorrhagic

Case No.	Symptoms	Physical	Etiology	Tem.	Pulse	B.P.	Blood Chem.
Sex Age							
Case No. 11	Edema. Headache.	Edema. Impetigo. Abdomen Distended. Tonsils slightly large and injected.	Tonsils. Impetigo.	101	120	140/100	*N.P.N. 30 Sug. 71 Creat. 1.5
Male 3 Years							
Case No. 12	Sore throat. Fever. Cough. Dysuria.	Edema. Tonsils large, cryptic, and shaggy.	Tonsils.	102	110	104/62	*N.P.N. 37.5 Sug. 80 Creat. 1.5
Male 5 Years							
Case No. 13	Edema. Scant urine. Enlarged abdomen. Headache.	Tonsils slightly enlarged and injected. Edema. Abdomen distended. Scars from impetigo.	Tonsils.	99	100	120/82	*N.P.N. 54.5 Sug. 83 Creat. 1.6
Male 6 Years							
Case No. 14	Edema. Fretful.	Restless. Edema. Serous nasal discharge. Liver palpable.	Rhinitis. Pharyngitis	98.4	130	94/40	*N.P.N. 27 Sug. 50 Creat. 1.5
Male 14 Months							
Case No. 15	Headache. Edema.	Edema. Bronchitis. Tonsils large and injected.	Tonsils.	101	110	not obtained	not obtained.
Female 4½ Years							
Case No. 16	Edema. Frequency of urination with red color.	Edema. Pharynx moderately red. Rales in chest.	Pharyngitis. Bronchitis.	101	136	158/110	*N.P.N. 33 Sug. 71 Creat. 1.5
Male 7 Years							
Case No. 17	Fever. Edema. Pain in abdomen. Pain in lumbar region. Vomiting. Convulsions.	Convulsions. Edema. Tonsils enlarged and red. Systolic murmur present.	Tonsils.	101	126	156/120	*N.P.N. 85 Sug. 200 (i.v. glucose) Creat. 1.9
Male 8 Years							
Case No. 18	Urticaria. Edema.	Edema. Catarrhal otitis. Pharynx injected. Systolic murmur present. Impetigo.	Otitis media. Pharyngitis. Impetigo.	100	120	130/78	*N.P.N. 40 Sug. 76.9 Creat. 1.5
Female 10 Years							
Case No. 19	Edema.	Edema.	Turpentine poisoning.	100	110	not obtained.	*N.P.N. 28 Sug. 66 Creat. 1.5
Female 2 Years							
Case No. 20	Refused to nurse. Fretful. Cough. Drowsy.	Mucous nasal discharge. Rales in chest. Distended abdomen. Liver enlarged 2 F. B.	Rhinitis. Bronchitis.	103	not obtained.		not obtained.
Male 7 Months							
Case No. 21	Sore throat. Fever. Edema. Frequent urination. Bloody urine.	Restless. Acutely ill. Edema. Cervical adenitis. Tonsils enlarged and red. Abdomen distended.	Tonsils.	103	144	106/72	not obtained.
Male 3 Years							

*N.P.N. indicates nonprotein nitrogen.

nephritis did not have subacute or latent nephritis. I am inclined to agree with their deductions.

CONCLUSIONS

A series of 21 cases of acute hemorrhagic nephritis is reported.

The majority of these patients had infections involving the upper respiratory tract; one had bronchopneumonia. Eight of the patients had impetigo contagiosa.

An outline of treatment is given with a discussion as to prognosis.

It is apparent from this study that acute hemorrhagic nephritis is a disease which is amenable to treatment, and one may conclude that the usual course of the disease is followed by complete recovery.

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Case No.	Urine	P.S.P.	Duration	Result
11.	Many red blood cells. Albumin.	not done.	Ill 10 days. Hospital 7 days.	Improved.
12.	Red blood ceels.	not done.	Ill 4 to 5 days. Hospital 2 days.	Improved.
13.	Red blood cells. Albumin.	not done.	Ill 18 days. Hospital 14 days.	Well.
14.	Red blood cells. Albumin.	not done.	Ill 9 days. Hospital 5 days.	Well.
15.	Red blood cells. Albumin.	not done.	Ill 21 days. Hospital 7 days.	Well.
16.	Red blood cells Albumin.	not done.	Ill 12 days. Hospital 2 days.	Improved.
17.	Red blood cells. Albumin.	not done.	Ill 48 days. Hospital 47 days.	Improved.
18.	Red blood cells— rare clumps. Albumin negative.	not done.	Ill 6 days. Hospital 12 days.	Well.
19.	Red blood cells. Albumin negative.	not done.	Ill 5 days. Hospital 5 days.	Well.
20.	Diagnosis: 1. Bronchopneumonia. 2. Acute Hemorrhagic Nephritis.		Ill 8 days. Hospital 3 days.	Died.
21.	Red blood cells. Albumin.	not done.	Ill 25 days. Hospital 18 days.	Well.

S. G. indicates specific gravity; P.S.P. phenosulphonp hthalein.

DISCUSSION ON PAPER OF DR. JOSEPH YAMPOLSKY

Dr. Benjamin Bashinski (Macon): Of course we always enjoy Dr. Yampolsky's papers. We have had some cases of acute hemorrhagic nephritis. I fully intended to bring three or four here this morning, but it was too early to get them and too hard to get them out of school.

As Dr. Yampolsky stated, the sex in our cases seems to be equally divided. If anything, we may have a few more females than males. In a number of cases that we have had, instead of having so much edema, the only symptom the mother noticed was bloody urine; instead of smoky, it was bright red blood. The majority of cases, more than half, have occurred after the tonsils were removed, not immediately after the tonsillectomy, but some of these cases occurred after the tonsils had been removed three or four years. In two of the cases, the patients had a very severe impetigo, about two weeks before the attack of acute hemorrhagic nephritis. In the majority of cases, as the doctor stated, you find blood cells, casts, occasionally white cells, and in some cases you do not find any white cells but numerous red cells. There are casts in every case.

The most important thing is treatment, and after seeing a number of these cases in the city—I do not know why we have so many, but we do—it seems most of them get well with or without treatment. Treatment does not seem to have much effect. Rest in bed is the most important thing. I tried them with different purgatives or laxatives, and of course one saline is as good as another. Personally, I use sulphate of soda or sulphate of magnesium. It does not matter

which you use. As the doctor stated, I believe most emphatically that rest in bed without any restriction of diet whatever does just as much good as the restricted diet. Of course limiting the fluid is most important.

There is one complication the doctor did not mention, and I should like him to let me know if his experience with it has been the same as ours. We have so many cases with cervical glandular enlargement. Practically all of our cases, just before the blood disappears from the urine, develop a very extreme and exaggerated cervical adenitis, and one went to abscess formation.

In only one case did we have to resort to transfusion, and whether or not this had anything to do with it I am unable to say, but the only thing I can state definitely is that the patient got well.

As to diuretics. In all cases we have used diuretics, and the ones that we have used have been potassium citrate, bicarbonate of soda, and where the urine was scanty we have used in the majority of cases diuretin or theobrominine sodium salicylate, with apparently good results. They get well, and the only question I should like to ask Dr. Yampolsky is whether it has been his experience that you get an associated cervical adenitis with a number of these cases.

Dr. Ruskin King (Savannah): I am very pleased to discover that I agree with Dr. Yampolsky in most of his remarks, because he is not a very good man with whom to argue. He can talk rings around most of us, and he generally knows what he is talking about.

There are, though, a few points I should like to bring up and a few questions I should like to ask.

The incidence of impetigo is so much greater in Dr. Yampolsky's series than in others that I wonder if it might not be due in part to the unhygienic surroundings from which these children came: simply a coincidental affair.

Also with respect to the etiology, I believe that the paranasal sinuses are a more frequent cause than they are generally given credit for being, and rather commonly cause some cases to lapse into a sub-acute case.

Concerning the laboratory findings, were the examinations of urine made on centrifuged specimens? I think you will ordinarily find casts if you use a centrifuge. If you don't carry out this procedure I think you will often miss them. A cast is a cast and should be regarded as a deviation from the normal sediment. Many of Dr. Yampolsky's children failed to show casts.

Regarding treatment, I personally like to give the kidneys a rest, but if others have other methods and get good results, I have no quarrel with them. I enjoyed the paper very much.

Dr. S. T. R. Revell (Louisville): The facts that I wish to comment on are these: First, to commend Dr. Yampolsky for his splendid presentation. Second, to state that in general practice, not having seen a great many of these cases, but something like six or eight, my experience has shown that they get well, regardless of what is done. The routine procedure that I have employed is to restrict the fluid intake, reduce the protein, lower the salt, and trust in God. They have all gotten well.

Dr. Homer H. Allen (Decatur): I have enjoyed the paper very much, and also the discussions, and I was also very much interested in the incidence of impetigo. I am discussing this from the standpoint of a general practitioner. I am not a pediatrician as a speciality.

I should like to call attention to one point, and that is the use of magnesium sulphate intravenously. I think in my series of cases the terrifying effects from the convulsions, on the family, has been the most troublesome symptom.

The use of glucose intravenously is very helpful, and also acts as a diuretic, and I have also found that you can quite frequently avoid the use of fine points of the needle by the use of this intravenous injection. I strongly recommend the use of magnesium sulphate intravenously. I have used it intramuscularly, but it usually causes a lot of scarring, and not abscess formation but rather prolonged induration, and very large lumps under the skin.

I more or less agree with the treatment. It seems most of us get the same results, regardless of the type of treatment.

Dr. Joseph Yampolsky (Atlanta): The case reports presented to you were from a charity hospital. I do not want you to trust in the Lord altogether with the hope that all these patients will get well. All patients with this condition should be put to bed; some of them are very ill, and convulsions, marked edema and anuria require prompt and adequate treatment.

My patients were not post-scarlittinal nephritics. The etiologic factors noted were usually tonsillitis and impetigo contagiosa, or a combination of the two. There was one patient with bronchopneumonia. None of the patients had cervical adenitis.

If I impressed my listeners with the importance of taking routine blood pressures when making examinations of young children, my report of these cases is justified.

CHOICE AND EVALUATION OF METHODS IN THE TREATMENT OF HEMORRHOIDS*

MARION C. PRUITT, M.D.

Atlanta

The simple common conditions that are amenable to treatment but often neglected are most interesting to me. This is my reason for the discussion of the common condition of piles.

It is not today the question of whether piles can be cured by operative, injection, electric, or palliative treatment. The questions are, what is the comparative value of the various methods, and, is one method more suitable for a certain kind of case than another.

Lack of agreement, as to the answer to these questions, is common knowledge. This is due partly to unavailable comparative data. Comparative data are unavailable largely because few men have had much experience in the use of the different methods. A scientific evaluation of the different methods can only come from one who has had considerable experience in the use of all of them. The enthusiasm of one who uses only one method is of little value. Criticism of method because of certain abuse or secrecy of use by unscrupulous practitioners does not indicate or determine the value of its use. Information secured from high-pressure salesmen representing manufacturers is often exaggerated. While every encouragement should be given to the development of auxiliary aids, their value should be determined by a scientific comparison of the results obtained through the use of these aids and the results of the accepted methods.

The choice of method may depend on the condition of the patient. Thus, in cases of secondary anemia with hemoglobin of 40 per cent or lower, due to the loss of blood from

*Read before the Medical Association of Georgia, Macon, May 12, 1936.

internal hemorrhoids, or in cases of delayed clotting time, injection treatment for the control of hemorrhage is the method of choice until the improved condition of the patient will permit further injection or operation.

Patients with hemophilia or purpura are poor surgical risks: hemorrhage following operation may prove fatal. When the bleeding from internal hemorrhoids is sufficient to demand surgical measures for the control of hemorrhage, the injection treatment, using the smallest needle possible to carry the solution, injecting into the center of the hemorrhoid just enough of a weak solution to control the hemorrhage, is the safest and simplest method.

Patients with congestive heart failure or renal insufficiency, tuberculosis or diabetes, and old people whose life expectancy is short are more safely treated by injection. The injection treatment can be given with little discomfort and practically no reaction, with immediate relief of symptoms. Treatment sufficient for relief of symptoms is often enough. If operation is preferred in such cases, local anesthesia should of course be employed.

Acutely inflamed hemorrhoids are best handled by palliative methods until the inflammatory process subsides.

Irreducible strangulated internal hemorrhoids with a relaxed sphincter are best treated by palliative measures until the protruding parts recede into the rectum. Then continue treatment by injection or operation. However, in such cases a contracted sphincter may demand divulsion to prevent gangrene of the protruding parts.

Hemorrhoids complicated by sphincter-spasm, constriction of the anus, fissure-in-ano, fistula, hypertrophied papillae, chronic cryptitis or thrombosed external hemorrhoids are surgical.

Simple internal hemorrhoids without local complications are suitable for either injection or operation. In many cases the choice of the patient may well be the deciding factor.

Combined external and internal hemorrhoids are surgical if you expect a cure.

Hemorrhoids associated with cancer of the rectum become insignificant and attention should be directed toward removal of the growth.

Kilbourne has compiled comparative statistics as to the value of methods from the

answers to a questionnaire addressed to 293 proctologists in the United States, Great Britain, France and Germany. He received reports of the results of 59,663 cases of internal hemorrhoids treated. Of this number 33,450 cases were operative and 26,183 were injection. Of the operative cases the types of operations used were:

Ligature and excision	25,293 cases
Clamp and excision	2,584 cases
Cautery	5,467 cases
Cautery and suture	250 cases
High frequency	150 cases

Note the small number of cases treated by high frequency. This indicates its lack of popularity which also suggests that it has little, if any place in the treatment of hemorrhoids.

"Hemorrhage following operation was reported in 0.573 per cent of the cases and following injection in 0.279 per cent of cases. Stricture following operation was estimated at about 0.2 per cent and after injection method this group of men had practically no strictures at all. Recurrence of the hemorrhoids was much more frequent after the use of injection methods, occurring probably in at least 15 per cent within three years."

The advantages of injection treatment are that it is practically painless and it is an office procedure, not requiring hospitalization or financial loss in absence from work, and it is therefore less expensive. The injection treatment in many cases gives the patient what he demands. Recurrences are partly due to insufficient treatment and when they do occur it is a simple matter to give further injections. It must be remembered that injection treatment is only suitable for internal hemorrhoids without local complication.

The advantage of operative treatment is that it is suitable for both external and internal piles. Operation allows for the removal or drainage of other diseased conditions which are so commonly associated with hemorrhoids. Results from operation are more permanent.

A cure of uncomplicated internal hemorrhoids is to be expected in the hands of experienced men by either injection treatment (85 to 90 per cent) or operative treatment (92 to 96 per cent).

DISCUSSION ON PAPER OF DR. MARION C. PRUITT

Dr. George F. Eubanks (Atlanta): We have had a very distinct privilege this afternoon. I think, in hearing a paper presented so excellently by the president of the American Proctologic Society. He is the president of a national organization composed of men who stand for the best in the American Proctologic Society, that is the men who are featuring proctology as a closely limited specialty or as a major interest, most of them absolutely limited to the diseases of the colon and rectum. I feel this is a privilege for all of us. I always appreciate the opportunity to hear Dr. Pruitt discuss his experiences in the treatment of diseases of this area.

I agree with Dr. Pruitt in the presentation of his material. I think the injection treatment of hemorrhoids is an indispensable weapon in the armamentarium of those of us who plan to treat these diseases. I agree with him in theory and practice that it is not a universal panacea in all cases of hemorrhoids. I think its use is more closely limited than the use of surgery. The things that militate against successful treatment in surgery are debilitated cases, profound anemia, and the other general symptoms that are associated with poor surgical risks in any other line of surgical treatment. He mentioned that the injection method is subject to a careful judicial evaluation in the treatment of these cases. I agree thoroughly with this. It has been my happy experience to be able to use both methods, as Dr. Pruitt has, with enough cases to be of at least superficial value in the determination of the various types of treatment and their applicability, and it is my experience that the injection treatment fills a need that cannot be replaced by the surgical treatment, electrocoagulation or any other means at our disposal.

My principal use of the injection treatment of hemorrhoids is in treating those patients whose blood loss has been sufficient to produce anemia. This is by no means trifling. It so happens at the present time that I have a patient in an Atlanta hospital, the son of a New York physician, who is doing some work in physiologic research at Emory University, who had a hemoglobin of 25 per cent and a red blood count of 2,300,000, when he came in my office last Saturday. That was a rather dangerous situation for a young man of 21 years of age. He had no demonstrable loss of blood, no limitation of the activity of the blood-forming organs or a gross loss of blood, except bleeding hemorrhoids. I gave him an injection of phenol in oil solution Saturday, hospitalized him, and he was transfused yesterday with 500 cc. of whole blood, with immediate improvement. It is my intention to continue his injections until we get a moderate control of his blood loss. Then after another transfusion, or perhaps two more, we will do a surgical excision of his hemorrhoids. They are not amenable entirely to the injection treatment, since they are the combined hemorrhoids which Dr. Pruitt mentioned.

I, frankly, seldom see uncomplicated cases of internal hemorrhoids. Most of the cases of internal hemorrhoids that I see, like, I imagine, those you gentlemen see, are those that have put off treatment until they are almost in desperation. The cases I see are complicated by numerous skin tags that occur with a peri-anal skin

discharge, causing difficulty in cleansing the anal canal after evacuation, which I think indicates surgical interference; they have spastic sphincters; they have cryptitis, papillitis, or other things that to my mind constitute surgical indications. These patients, I feel, can be only palliated by injection, and I think we are relieving only part of the disease by that method. I am sure this is the implication Dr. Pruitt made, and I agree with him in that these cases are definitely surgical rather than amenable to injection treatment with expectation of cure.

The economic advantage to patients by the injection method cannot be gainsaid. I feel that there are many patients, irrespective of the type of people on whom we work, whose economic status is such that they cannot stand a \$50 or \$100 hospital bill, irrespective of the surgeon's charge. I think in the cases of symptoms of bleeding or protrusion, they are benefited by a series of injections. I feel that the operator in this case should qualify his assurance to the patient by the understanding that the treatment may not result in permanent cure, that some further treatment may be necessary, or it may even be necessary to finally resort to surgical intervention.

Dr. A. M. Phillips (Macon): I think this subject has been covered very fully by Dr. Pruitt. I can only try to emphasize a few of the points that he brought out in his paper. First of all I want to say that I do not think any physician who is not experienced in all methods of treating hemorrhoids can give an unbiased opinion as to which is the best.

The injection treatment has gained a great deal of popularity within the last few years, and it is used now by a great many more doctors than formerly. I think, however, that our enthusiasm gets the better of our judgment at times.

When I first started treating hemorrhoids I was very enthusiastic over the injection treatment, and I used it a good bit. I do not use the injection treatment now as much as I formerly did. The type of hemorrhoid that is treated most successfully by the injection method is the hemorrhoid in its early stage, before any of the ordinary complications set in, and before you have a great deal of protrusion and hardening of the tissue. I think after the fibrosis has taken place in the hemorrhoidal tissue, the injection only serves to plaster this firm mass against the rectal wall and, of course, the pressure and pushing down that is brought about later on, only tends to cause a recurrence of this condition.

One of the main objections to the treatment of hemorrhoids by the injection method, so far as I can see, is that patients do not cooperate to the fullest extent. While they are suffering and are having a lot of trouble with protrusion or with pain and discomfort that might be brought about by the condition, they are willing to cooperate; but as soon as their suffering is relieved or the protrusion, or whatever is bothering them, is relieved, it is a difficult matter to get them to continue their treatment until they get a successful cure. That is the big trouble I have had all along and, as I said, I do not use it as much now as I formerly did.

Dr. H. H. Askew (Atlanta): There are usually two classes of proctologic physicians; one who adheres to the surgical side of proctology and the other to the injection method of treatment. It has been my experience that usually the surgical proctologist is inclined to go the way of surgery and the conservative man away from surgery. Personally I am one of the enthusiastic type of injection men, but I believe that when surgery is indicated it should be carried out. As I was surgically trained, I do surgery on rectal conditions when it is indicated.

In the internal hemorrhoids there is a positive indication for injection therapy. In the mixed variety of hemorrhoids, that is, the interno-externo hemorrhoid, injection alone will not cure the patient. As Dr. Pruitt stated, if you leave the external connective tissue tabs they will always cause the patient trouble. However, the majority of men doing this type of work usually inject the entire hemorrhoidal area and then at the end of the treatment the external skin tabs are removed in the office, in stages, by a simple surgical procedure. With the proper injection of the hemorrhoidal zone and the necessary external surgical manuring, so to speak, they will get a permanent cure. Of course, this is explained to the patient before the treatment is begun. To summarize, if the patient has simple internal hemorrhoids it is easy to cure him by injection treatment alone. But, if he has internal hemorrhoids with external skin tabs and has the skin tabs removed at the completion of the injection treatment, he will get equally good results as with surgery.

I have seen all types of solutions used. Dr. Pruitt's 12½ per cent carbolic in glycerine and water is one solution. The 5 per cent quinine and urea is the solution used by Dr. Terrell of Richmond, Va. I have seen him use this solution with excellent results. But, I personally prefer 5 per cent phenol in vegetable oil and believe this to be nearer foolproof than any other solution.

I think no one has mentioned the complications that may arise from the injection treatment. Some of the complications are: abscess formation and sloughing, both of which I have seen. In order to avoid these complications it is necessary to use the proper solution and the proper amount of solution in each hemorrhoid.

The best time to cure an internal hemorrhoid is at its first injection; give the pile the proper amount of solution, then never inject over the same area within two weeks of the initial injection. If you do, as a rule, you will get a superficial slough of the mucous membrane, which will not give symptoms. Therefore, it is necessary to keep accurate records and know exactly where you have placed the previous injection.

Dr. Marion C. Pruitt (Atlanta): I appreciate the complimentary remarks made by Dr. Eubanks, Dr. Phillips and Dr. Askew. When a man talks that much about you, you question whether he is serious or whether he is choosing to discuss with a little levity.

When I discuss the subject of hemorrhoids I am always serious, and when I listen to other people discuss hemorrhoids I am also serious.

I feel that there is more in the subject than can be written by a description of any one standard method of treatment, and that each patient is a law unto himself, and deserves the same kind of examination and the same kind of consideration from a constitutional standpoint as any other patient with a diseased condition. That is to say, it is only a part of the pattern of diseased conditions that may occur in the body, and other conditions must be taken into consideration in the selection or the choice of the method which will give the best results in that particular individual case.

Thus, in the case of an old gentleman or lady who has a few years left in life, that method of treatment that will relieve the symptoms or inconvenience of the local condition, with the least possible reaction, is probably the choice treatment, even though you use that treatment on that patient as a palliative measure.

There is little disagreement in opinion, as you have noticed from the discussions this afternoon, by men who are interested in this subject enough to know and evaluate the different methods. I should like to emphasize that in the treatment of internal hemorrhoids my experience in the choice of method, including also the choice of the patient, about 30 per cent of the internal hemorrhoids are amenable to the injection treatment, and about 90 per cent of these in a series of cases that I followed up have had a three or more years' cure.

I should also like to emphasize one statement; that is, as to the value of electric treatment. I will be rather dogmatic. I do not think that electric treatment has any comparative value with the other standard methods of treating any form of hemorrhoids, and certainly it has no place in the treatment of external hemorrhoids.

As to the solutions, I did not include that in this paper. That is a subject within itself. There are three more or less standard solutions: 1. A solution of carbolic acid in glycerine, which varies from 5 to 12.5 per cent; 2. A solution of carbolic in one of the vegetable oils, which varies from 5 to 10 per cent; 3. An aqueous solution of quinine urea hydrochloride. Any one of these solutions, if you follow a technic suitable for that solution, will give a good result. There is little variation in the results from the solutions, provided you know the technic that is most suitable for that solution.

There is this to be said about the amount of solution that is given: A solution of carbolic acid in glycerine, where 3 to 6 drops are injected; a very small area is involved in this treatment. If a slough follows, it will be small. A solution of carbolic in a vegetable oil is measured in cubic centimeters and varies from 1 to 5 cc. Some give as much as 6 cc. in each hemorrhoid. A large area is involved in this treatment. If a slough follows, it is more extensive and hemorrhage may be more severe and more difficult to control. Hemorrhage following injection treatment of hemorrhoids is rare. One caution I would like to make: When a hemorrhage does occur after injection treatment, don't see how quickly you can get them to the operating room. First, use palliative measures, such as: morphine, put to bed, avoid going to the stool, and replace the protruding parts if present. This will control the bleeding in most cases.

RECENT DEVELOPMENTS IN SOCIALIZATION OF MEDICINE*

WILLIAM H. MYERS, M.D.
Savannah

National Health Insurance is the politicians' panacea for social unrest, and Bismarck, the great German Chancellor, was the first political leader to successfully advocate this method of ministering to the sick. His purpose was to offer some attraction which would neutralize the promise being made by the growing socialists, not realizing that he was playing right into the hands of the Socialistic party.

Since Bismarck's success fifty-six years ago, eighteen other nations have followed suit, but the results must be left largely to conjecture, for politicians seize upon this rich field for exploitation, so that wilful distortion of facts, and rapidly changing regulations, make it impossible for any outsider to arrive at an opinion free from bias or political stage-setting.

Social unrest, and not inadequate service, is the underlying factor in all social legislation. Social unrest is well nigh universal, and save for the Scandinavian countries, the world seems on the verge of a great upheaval. The nature of this upheaval is not difficult to understand, and the price exacted is in the loss of personal liberties. Dictatorships have been fastened upon the necks of the people of nine separate countries since the beginning of the Great War. Unless the signs of the time fail, or the people become aroused to the danger that is eminent, there will be more and greater sacrifices in human rights.

You have heard within the last eight years a great deal about the high cost of medical care on the one hand, and the total lack of such care on the other. You, as physicians, need no explanation or rebuttal of these statements, for we all know that people often demand the most expensive services in time of serious illness, and any effort on the part of the attending physician to save expense is frequently received with scant courtesy. A great many people believe that money is near omnipotent, and if unlimited funds are avail-

able, that catastrophic illness can be averted. So, if the cost of medical care is too high, it is due to the demands of the public, and not to the necessary fees of physicians. The propagandists say that there is a large part of the populace that has no medical care. The Committee on Medical Economics of the *American Medical Association* sent questionnaires to the mayors of one hundred American cities, requesting information as to the number of people not getting medical care. Every one of these mayors stated that there was no appreciable lack of medical care in his community; this is a talking point, and not a fact.

You will agree with me, when I say that many indigent people are too shiftless to seek medical care, or to persist in treatment, unless it is made easy and attractive. For this, we are not responsible.

The first essential in preservation of health and arrest of disease is a suitable quantity and a good quality of food, but I know of no organized effort that is being made to solve the problem of adequacy of food. But as I see it, the spirit of the time is to wage battle against some bogey, as did Don Quixote in his attacks upon the windmills. The medical profession is the "windmill" that the rich foundations, the social workers and the politicians attack, because we do not give the attention to our own interests that we do to those of our patients.

A special meeting of the House of Delegates of the American Medical Association was held in Chicago in February, 1935, for the purpose of formulating plans to save the medical profession from complete regimentation. A bill of rights, as it were, was adopted, in which ten points set forth the principles which should be preserved under any system of practice.

At that time the President was determined to push his full social security program through congress; but he later learned of the stupendous expense of the system of Health Insurance, and became less aggressive in its interest.

However, Mrs. Roosevelt recently became the willing tool of the propagandists, and with Dorothy Everette Lape, Secretary of the American Foundation, saw her opportunity and joined the advocates of sickness insur-

*Read before the First District Medical Society, Savannah, July 21, 1937.

ance. They were sympathetically received by the Senate Committee on Reorganization of the Executive Branch of the Government, to which their plans were presented and which were in turn referred to a sub-committee, the chairman of which is Senator J. Hamilton Lewis of Illinois. This message was carefully guarded, so that no representative of the American Medical Association was able to learn anything about its contents. Senator Lewis, in evidence of his friendship for the medical profession, requested the privilege of appearing before the House of Delegates of the American Medical Association at the meeting in Atlantic City last month. His reception was one of marked cordiality, and his address was accepted as one of sincerity. But what he said was the thing that we had feared so long to hear.

The members of the House had no previous knowledge as to the nature of the speaker's address. But as he revealed the depths of the communistic activities in congress, the faces of his auditors gave evidence of the intensity of their feelings. He said as our friend and as chairman of a hostile committee, he had come to tell us what was being done by his committee in order that we might salvage some of our rights. He brought what he purported to be a message from the President of the United States, but the President later denied that he had sent such a message. You may draw your own conclusions as to these divergent statements.

Briefly, the Senator's message was to the effect that it was considered that patients had been held in bondage by physicians, but that the New Deal was going to free them from this intolerable situation. The mere claim of a physician that he had patients proved to the parietic mind of Washington that some hideous form of oppression existed, and that the most cherished relationships between physician and patient were to be destroyed in the manner of the Bolshevists of Russia. After this shock, we were further told that we were no longer to practice medicine under a license granted by our individual states, but that the Federal Government considered the health of the nation to be a Federal problem, and since physicians were the ones whose mission it is to conserve health and life, that the medical profession is to be regimented un-

der control of the national government, a license from which will be a prerequisite of practice in any locality. In furtherance of this plan, we are to render statements to the government for the services that we render, instead of to the patients.

Gentlemen, this is a doleful story, and I feel almost like apologizing for such a pessimistic outlook. But this is no time for Pollyanna and platitudes, for such would only be "whistling in the dark," and ignoring the great crisis in our affairs, of which regimentation of the medical profession is only one phase.

What shall we do? Let your Senators and Representatives know in no uncertain terms what you think about pending legislation, and tell the public what they are in danger of losing.

What may we expect? If the attack on the Supreme Court fails, we are relatively safe. For without doubt, much of the social legislation will be ruled unconstitutional by an untrammelled court. But if the Supreme Court is packed according to the New Deal plan, all obstacles to the completion of a dictatorship in this country will be removed, which will result in the loss of our personal and professional liberties.

This is the first time in the history of this Republic that the nation's affairs are reported to the public through the medium of highly specialized propagandists, when opposition to the government is met by reprisals, when profligacy is the rule, when secrecy and subterfuge are recognized as valuable expedients, and when the ship of state is steered by the star of deception. If you believe that we are not in danger of a communistic form of government, you are blind to the supreme crisis of this nation.

H. MASON SMITH, *Tampa, Fla. (Journal A. M. A., June 5, 1937)*, asserts that treatment by hypoglycemic shock in dementia praecox can be carried out successfully in any general hospital that has a good psychopathic ward with a trained personnel of physicians and nurses. Indeed the dangers are more readily avoided and the emergencies more easily met in such an institution than in a psychopathic hospital. Also, treatment in a general hospital obviates the necessity of committing many patients to state institutions, a consideration usually of great importance to the patient's family and of economic significance to the state as well. He reports eight unselected cases of psychosis and neurosis which show the feasibility of this treatment in a hospital.

MULTIPLE GLIOMAS OF THE BRAIN SIMULATING VASCULAR DISEASE*

RICHARD B. WILSON, M.D.
Atlanta

It is an old German admonition that every man should see to it that he is married before he has his first stroke. Aside from whatever wisdom this may contain, it serves as a forceful reminder that if we do not run foul of a premature death, we will inevitably succumb on the reef of a vascular accident.

In any case of paralysis of sudden onset, one may always assume that it is due to a vascular lesion, usually structural in nature. In young adults, the most frequent etiologic factors in order of probability are syphilitic vascular disease and hemorrhage into a brain tumor; in elderly people, the order is arteriosclerotic vascular disease and hemorrhage into a tumor, with syphilis as a possible factor to be considered. Embolism is comparatively rare, and when present is usually accompanied by obvious evidence of a possible source, e.g., endocarditis. In elderly patients, even with advanced generalized arteriosclerotic changes, tumor is always to be regarded as a possibility; and frequent examination of the eye grounds will usually enable one to make the correct diagnosis at the earliest possible moment—certainly cerebral arteriosclerosis confers no immunity to tumor. In most cases of hemorrhage into tumor, signs of increased intracranial pressure, i.e., edema of the optic discs, if not present at the time will usually appear within a few weeks. In rare cases, evidence of increased pressure is lacking and the correct diagnosis is not made. Such a case is the following.

C. A. P., white male, aged 50, was admitted to the hospital in a stuporous state.

Present illness: For two years the patient had complained of frequent severe headaches in the vertex. Two weeks prior to admission, he began to act queer, appeared dazed and confused; but there were no complaints. Two days later, he began to drag the left leg, and the left arm seemed weak. The weakness became gradually more marked and for several days there had been frequent vomiting.

The patient was a poorly developed and nourished white male of about 55, lying quietly in bed on his

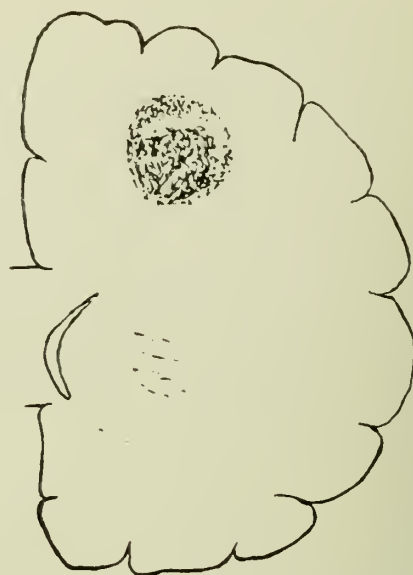


FIG. 1
Sagittal section through the middle portion of the left frontal lobe, indicating the size and shape of tumor mass.



FIG. 2
Sagittal section through the posterior part of the right frontal lobe. The medial portion of the tumor mass shows central necrosis; the lateral portion is hemorrhagic.

back in no apparent discomfort; but stuporous and entirely uncooperative. The general physical examination revealed nothing striking. The peripheral arteries were thickened; heart, lungs, and abdomen were clear. Blood pressure was 110-70.

The optic discs were of good color and with distinct margins. There were moderate arteriosclerotic

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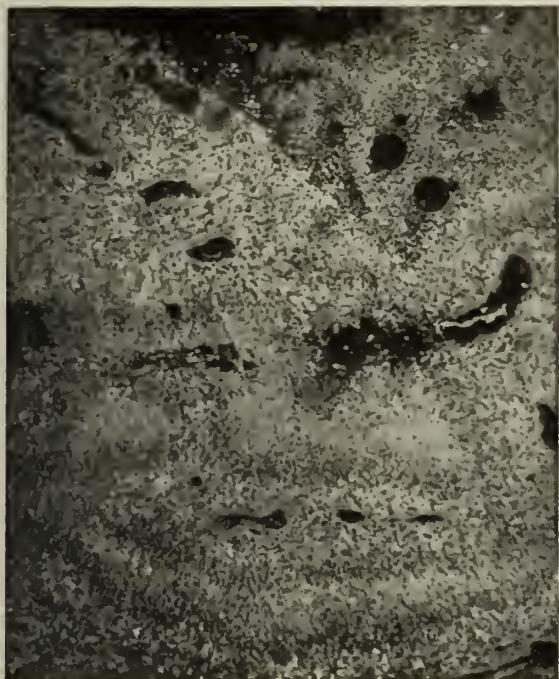


FIG. 3

Section from tumor mass in left frontal lobe. Note the pseudo-rosette formation, the palisade arrangement of cells around necrotic areas.

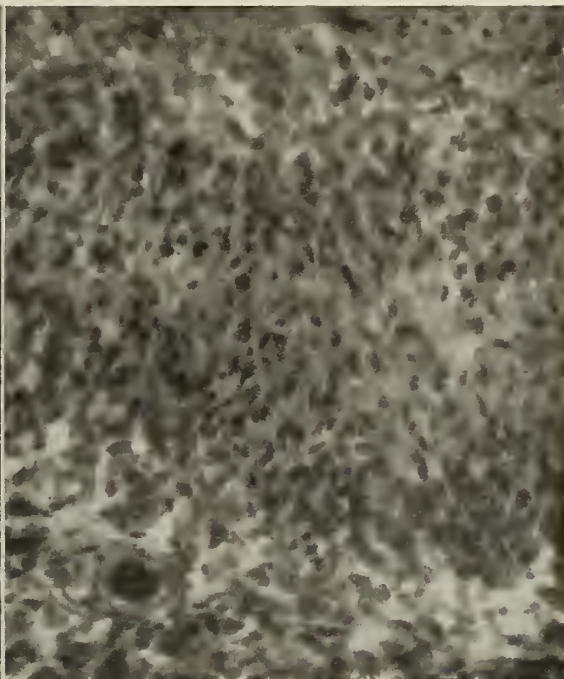


FIG. 4

High power of same area. Note the variation in the size and shape of the cells.

changes in the retinal arteries. The pupils were equal, regular, and reacted to light. No obvious cranial nerve involvement could be detected. In placing the arms and legs in various positions and releasing them, it was apparent that a flaccid paralysis existed on the left. The tendon jerks were very sluggish but equal. The spinal fluid was clear, colorless, and under a pressure of 120 m.m. of water.

Thus, in view of the age of the patient, the evidence of generalized arteriosclerosis and the absence of signs of increased pressure, the diagnosis of cerebral arteriosclerosis with thrombosis or hemorrhage was made, but with the possibility of tumor in mind especially in view of the frequent severe headaches.

The patient improved gradually until the fifth day when he became comatose. The discs at that time appeared normal. His condition grew steadily worse and exitus occurred on the eighth day. The discs appeared normal when examined a few hours before death.

On removal of the brain, a transversely elongated, yellowish discolored and softened area was found in the right motor cortex, extending from near the midline. The lateral portion appeared hemorrhagic.

A sagittal section passing through the central part of the left frontal lobe revealed an area about 3 c.m. in diameter, consisting of yellowish necrotic material, intermingled with firm, gelatinous like nodules. (Figure 1.)

Sections passing through the area in the right motor cortex described above disclosed a similar appearing area, the lateral portion of which was hemorrhagic. (Figure 2.)

In the gross specimen both masses had all the appearance of a glioma. Microscopic sections of the area in the left frontal lobe and of the area in the right frontal lobe gave almost identical pictures. The mass was very cellular, the cells resembled macroglia and varied markedly in size and shape. A few multinuclear giant cells were present, some showing mitotic figures. There were large and small areas of degeneration around which the glial cells formed a wall in which the cells in general were arranged in parallel, with the long axes perpendicular to the necrotic area. This constitutes a typical picture of a spongioblastoma multiforme. (Figures 3-6.)

In this case, the possibility of tumor was considered and frequent examinations were made for any evidence of increased pressure, which at no time was manifest.

In addition to the clinical oddity of this case, it is of pathologic interest as an illustration of the occasional queer behavior of gliomas; behavior which, I believe, is not generally appreciated. In this brain, we have found two tumor masses of identical histologic structure, each developing independently. Funk has recorded such a case in which a patient with a right hemiplegia was discovered to have a tumor in the left motor area; but in addition, there was also an isolated tumor in the right frontal lobe which

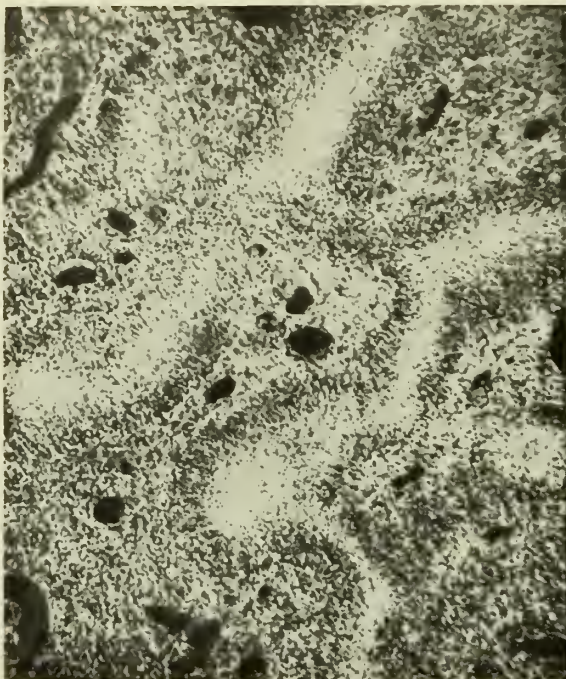


FIG. 5
Section from tumor mass in right frontal lobe.
Compare with Fig. 3.

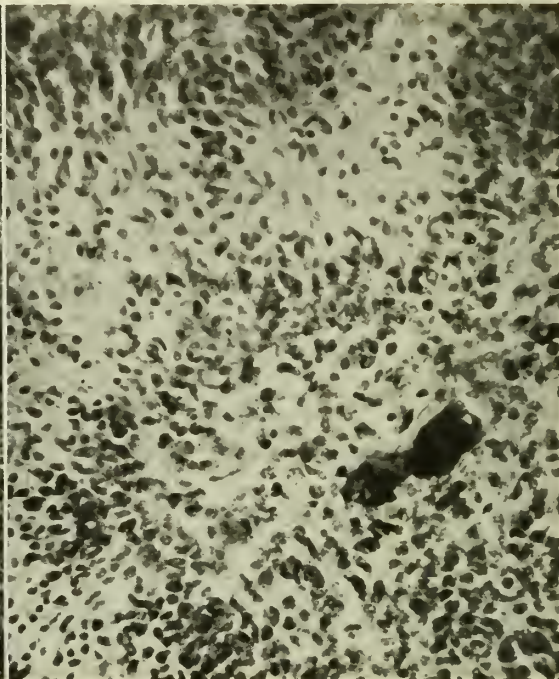


FIG. 6
High power of same area. Compare with Fig. 4.

had presented no symptoms. Both tumors were spongioblastomas.

Cases have been reported by Monez and Lima, Babonneux and Widiez, Taylor, and by Hozoi, in which multiple gliomas have been encountered, and some were thought to have arisen independently. However, from the descriptions of these cases, there is much doubt as to the independent origin, since these tumors have all been adjacent to or invading the ventricles or the subarachnoid space. Thus, the extensions may have occurred through the fluid pathways.

Multiple tumors which apparently have arisen by extension from a primary focus have been more frequent. Thus, Taylor describes a case in which a spongioblastoma multiforme was found in the left posterior temporal lobe and another in the right parieto-temporal lobe. But on careful examination, a thin growth of tumor cells was found connecting the two masses.

An invasion of and spreading through the meninges is even more common. Firor and Ford have described a case in which a glioma in the region of the infundibulum ruptured through to the base of the brain and, infiltrating the subarachnoid space, surrounded

the cord and in one area invaded the cord. Viets records a case in which a tumor in the right temporal region extended through the brain to the pons, infiltrated into the subarachnoid space, and spread over the base of the pons, medulla, and the surface of the cord. Brannon has reported a similar case in which a glioma in the left basal ganglia penetrated the ventricles, spread over the base of the brain, medulla, and surface of the cord. Brannon also in 1926 found seventeen such cases reported in the literature.

At times, without such a direct extension through the meninges, glioma cells may rupture into the ventricles or subarachnoid space and give rise to an isolated focus at some distant point. Some years ago, Dr. Ed Fincher operated on a young girl for a glioma lying near the ventricle. Several months later, the patient developed signs of a lesion of the lumbo-sacral cord, histologically identical with the original tumor. Incontrovertible evidence that this cord tumor was the result of a transplant from the original tumor is the fact that in it were imbedded several silver clips inserted during the original operation.

Gullotta describes an interesting case in which a meningioma was found over the left

pretemporal area and in the brain beneath was found an astrocytoma. He suggests that this glioma may have been a reactive glioma.

Conclusions

In any case of paralysis of the cerebral type, brain tumor should be considered as a possibility even when there exists a physical background typical for a vascular lesion of some other nature. From this it follows that frequent and repeated examination should be made for evidence of increasing intracranial pressure.

In spite of the fact that gliomas do not metastasize in the commonly accepted sense, they can nevertheless arise simultaneously in isolated areas, can by extension give rise to apparent independent foci, and by invading the subarachnoid space, may spread widely or appear as distant transplants.

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EDWARD J. DONOVAN, New York (*Journal A. M. A.*, Aug. 21, 1937), states that congenital hypertrophic pyloric stenosis occurs about seven times more often in boys than in girls. In the group reported on there were seventeen girls and 126 boys. Vomiting is always the first symptom and in the majority of the cases begins between the second and the fifth week of life. The tumor, caused by hypertrophy of the circular muscle of the pylorus, is pathognomonic of the condition and may be felt in every case. The Fredet-Rammstedt submucous pyloroplasty is the most satisfactory operation and gives a permanent result, as shown by the follow up of the cases reported. There were no deaths in this group. One death occurred in a group of 100 cases reported in 1932, making a total of one death in the last 243 cases. Preoperative preparation is the greatest factor in bringing the mortality to its present level. The complication most to be dreaded is accidental opening of the duodenum. The change from thick pyloric tumor to thin duodenum is rather abrupt, and great care must be exercised in separating the cut edges of the muscle toward the duodenal end.

RECOMMENDATIONS FOR MINIMUM MEDICAL AND SURGICAL FEE SCHEDULE

WORKMEN'S COMPENSATION ACT

Savannah, Ga.,
June 16, 1937.

DR. C. W. STRICKLER, *Chairman*,
Committee on Medical Economics,
Medical Association of Georgia,
Atlanta, Georgia.

DEAR DOCTOR STRICKLER:

The sub-committee appointed following the annual session of the Medical Association of Georgia in Macon to formulate a fee schedule covering medical and hospital charges in connection with the recently amended Workmen's Compensation Act of Georgia, has carefully studied all angles of this question and renders the following report:

First: A fee schedule, arrived at after careful study by all concerned, is attached hereto. The committee feels that this schedule offers a fair remuneration to those doctors who handle industrial surgery and we urge its approval by the Economics Committee and by the Council of the Medical Association of Georgia. We further urge that it be submitted to the Industrial Relations Board as the official schedule approved by the MEDICAL ASSOCIATION OF GEORGIA and trust the Industrial Relations Board will adopt it as such.

We feel that this schedule will not work any hardship upon either employer or insurance carrier and will assure adequate medical and surgical treatment to the injured.

Second: In connection with x-ray charges we feel that those doctors who are qualified as experts in this line, and who devote their entire attention to x-ray examinations and treatments, and who necessarily must maintain expensive offices and powerful equipment, are entitled to more remuneration for their examinations than the industrial surgeon who owns a small unit for fracture work, and who cannot qualify as an expert roentgenologist should the necessity for his testimony in court arise. We have therefore submitted two separate schedules covering x-ray examinations, one for charges made by the industrial surgeon who takes his own pictures and another for the qualified expert roentgenologist who will be required to furnish at least four typewritten copies of the report of his examinations for the guidance of the surgeon who referred the work, for the insurance carrier, and the Industrial Relations Board.

Third: In the matter of hospital charges, we have found a great discrepancy and variance in the charges prevailing throughout the State. The hospital charges are arrived at by the accounting departments of the hospitals and are based upon the cost to the hospitals for maintaining patients. It would seem that this cost varies considerably in different localities of the State, and we feel the wisest thing to do in this connection is to allow the hospitals to charge the prevailing rate in the community for a two-bed ward, for the ordinary injuries necessitating hospitalization, with additional

charges if the patient is so seriously injured as to require the quiet and isolation of a private room. Very few of the injured cases coming under the Workmen's Compensation Act will require private rooms, but we feel that any of those injured should be entitled to be treated in a room with not more than one additional patient. We believe the hospitals will meet the employers, insurance carriers and the Industrial Relations Board more than half way in this matter, and we feel sure that no hospital in the State of Georgia will attempt to charge more in these cases than they would other persons requiring the same accommodations. We feel that this recommendation should also apply to the set charges made by hospitals covering use of operating rooms, anesthetics, emergency rooms, special nurses' board, plaster casts and all other charges not included in the bed rate. We feel if a minimum bed rate were made it could not be less than \$4.00 per day, as many of the hospitals in this State charge that rate for ward cases. In other sections of the State two-bed wards can be secured for from \$2.75 per day up, and we believe it would work a hardship upon the employers to establish a minimum rate of \$4.00 in those cases where the hospitals can operate, as they are apparently doing, for less.

Fourth: We feel that no attempt should be made to regulate the charges of special nurses as their prices are standardized by the various nurses' associations and they are entitled to their full fee for services performed.

In the formulation of a fee schedule for services rendered by doctors we wish to assure the Committee on Medical Economics that eminent men who are engaged in the various specialties, such as eye, ear, nose and throat, internal medicine, pathology and roentgenology were freely consulted. The representatives of the various insurance carriers were also consulted and many employers were interviewed.

We feel that the industrial surgeons of Georgia can be trusted not to pad their bills by unnecessary visits, and that they will, as they have always done, bend every effort toward the restoration of the injured person to his work as early as possible, with a minimum of disability, either temporary or permanent. After all, that is the chief objective.

A final suggestion would be for the Economics Committee to ask the Industrial Relations Board to work out some plan whereby medical bills of less than one hundred dollars could be spared the necessity of being forwarded to the Capitol: possibly some individual in each insurance office could be deputized to approve these minor bills for the Industrial Relations Board—the law seems to give that power.

Respectfully submitted,
 Sub-Committee on Medical Economics.
 Fee Schedule, Workmen's Compensation Act
 C. F. HOLTON, M.D., *Chairman*
 JAMES J. CLARK, M.D.
 W. W. CHRISMAN, M.D.
 JACK C. NORRIS, M.D.
 CHAS. E. LAWRENCE, M.D.
 THOS. P. GOODWYN, M.D.
 ROBERT L. RHODES, M.D.

A MINIMUM SURGICAL AND MEDICAL FEE SCHEDULE

Covering professional services to injured workmen who come under the provisions of the Georgia Workmen's Compensation Act and its Amendments.

Formulated by a Sub-Committee on Medical Economics of the Medical Association of Georgia, appointed by the President of the Association upon authority granted by the House of Delegates in session assembled at Macon, May 11, 1937, approved by the Committee on Medical Economics and adopted by the Council of the Medical Association of Georgia in official session at Atlanta, June 16, 1937.

This is a minimum fee schedule and is not to be construed as conflicting with existing or contemplated arrangements between doctors, insurance carriers and/or employers, where such arrangements meet with the approval of the Medical Association of Georgia or its Council.

Charges not enumerated herein are to be reasonable and are to be by arrangement and agreement.

MISCELLANEOUS

FIRST AID: This includes strapping back, treatment of minor joint injuries, 2 or 3 sutures.	\$ 3.00
For long lacerated and incised wounds requiring 8 or 10 sutures	5.00
Hospital or Home Visits, each	3.00
Night visits, 8 P.M. to 7 A.M.	5.00
Subsequent office visits	1.50
Neo-salvarsan, each injection, plus office visit	2.00
Anti-rabies, each injection (plus cost of medicine, unless furnished by State)	2.00
Spinal puncture, including manometric reading	10.00
Physio-therapy	3.00
Tetanus Antitoxin—cost of drug only.	
Urologic consultation	10.00
Each additional visit	3.00
Testimony before Industrial Relations Board	10.00
Testimony before Industrial Relations Board by a qualified disinterested expert	25.00
Examination and written report on injured where examination made by other than attending surgeon	5.00
Calls to out of town cases for consultation, examination or treatment, regular charges, plus fifty cents per mile, one way.	
Administration of salvarsan or neo-salvarsan should be authorized by employer, insurance carrier or the Industrial Relations Board.	

MEDICAL

Consultation with report	\$10.00
Additional visits	3.00
Neurologic examination, complete, with report	25.00
Additional visits	3.00
Urologic consultation	10.00
Additional visits	3.00
Electrocardiogram	10.00
Basal metabolism	10.00
Pneumothorax, first	10.00
Each additional	5.00
Spinal puncture, including manometric reading	10.00
Aspiration of chest	10.00

Each additional	5.00
Aspiration of abdomen	10.00
Each additional	5.00
Intraspinal treatments, plus cost of serum or drug	10.00
Each additional, plus cost of serum or drug	5.00

DISLOCATIONS

Shoulder (after care extra)	\$10.00 to \$15.00
Elbow	15.00
Wrist	10.00 to 15.00
Hip	25.00 to 50.00
Knee	25.00
Ankle	15.00
Clavicle	15.00
Finger or Toe	5.00
Jaw	10.00 to 15.00
Ribs	10.00
Spine and Pelvis by Traction	50.00
Carpal Bones	5.00 to 10.00
Open reduction of the above: reasonable fee, under agreement.	

FRACTURES

Upper Arm (after care extra)	\$25.00
Forearm, Colles	25.00
Forearm, one bone	25.00
both bones	35.00
Femur	50.00
Tibia	35.00
Fibula	25.00
Lower leg, both bones	50.00
Jaw	25.00
Ribs	5.00
Patella	50.00
Pelvis	\$50.00 to 75.00
Metatarsal or Metacarpal	10.00
Finger	5.00 to 10.00
Toe	5.00 to 10.00
Skull, simple, non-operative	25.00
Coccyx	5.00 to 10.00
Sacrum	15.00
Sternum	10.00
Spine	75.00
Lachrymal bone	5.00
Malar	25.00
Scapula	10.00 to 25.00
Clavicle	10.00 to 25.00
Nasal bones	10.00
Carpal	15.00 to 25.00
Tarsal	25.00 to 35.00
Potts fracture	35.00 to 50.00
Compound fractures: reasonable increase, under agreement.	
Open reduction on the above: reasonable fee, on agreement.	

OPERATIONS, USUAL TYPE

Exploratory laparotomy, with after care	\$100.00
Herniorrhaphy, single, with after care	75.00
Herniorrhaphy, double, with after care	100.00
Hernia, strangulated with resection of bowel, with after care	150.00
Hernia, recurrent, single, with after care	100.00
Hernia, recurrent, bilateral, with after care	125.00
Hernia, ventral or post-operative, with after care	100.00
Hernia, diaphragmatic, with after care	150.00
Tendon sutures, without after care	\$10.00 to 25.00
Rupture of kidney with removal, with after care	150.00
Rupture of kidney with drainage only, with after care	100.00
Orchidectomy, without after care	50.00
Epididymectomy, with after care	50.00
Ruptured urethra, without after care	50.00

Ruptured liver, with after care	150.00
Ruptured spleen, with after care	150.00
Ruptured viscus, with after care	150.00
Semi-lunar cartilage, knee, without after care	50.00
Bonegraft, with after care	\$100.00 to 150.00
Arthrodesis, with after care	100.00
Laminectomy, with after care	150.00
Excision bursa, elbow, without after care	25.00
Excision bursa, prepatellar, without after care	25.00
Nerve suturing, primary, single, without after care	25.00
Each additional, without after care	10.00
Nerve suturing, secondary, reasonable fee by agreement.	
Skull, requiring decompression, with after care	125.00
Skull, compound, including craniotomy, with after care	150.00
Operations for delayed union of fractures: reasonable fee, by agreement.	
Open reduction of fractures: reasonable fee, by agreement.	

AMPUTATIONS

Fingers or Toes, without after care	\$10.00 to \$ 15.00
Arm or Forearm, without after care	50.00
Shoulder, without after care	75.00
Leg, without after care	50.00
Thigh, without after care	75.00
Hip, without after care	100.00

MINOR SURGICAL PROCEDURES

Anesthetics, minor	\$ 5.00
Anesthetics, major	10.00
(Where Anesthetist furnishes gas for operation at home or surgeon's office, cost of gas to be added to fee.)	
Assistant's Fee, minor	5.00
Assistant's Fee, major	10.00
Cystoscopy, simple	10.00
Cystoscopy, with catheterization of ureters for x-ray	25.00
Removal of nail, finger or toe	3.00
Abscess, incision and drainage, without after care	\$3.00 to 5.00
Foreign bodies, removed from wounds, without after care	\$5.00 to 10.00
Burns, minor, \$3.00 and regular office visits.	
Burns, severe, \$5.00 to \$10.00 and regular office, hospital or home visits.	
Transfusion, direct or indirect method	25.00
Skin grafts, for burns or other conditions, reasonable fees by agreement.	

EYE, EAR, NOSE AND THROAT CONDITIONS

Ordinary removal of foreign body:	
(a) Attached to cornea or conjunctiva, but not embedded	\$ 3.00
(b) Simple embedded	5.00
Localization of foreign body inside the eye ball, when necessary, x-ray	25.00
Extraction of foreign body from inside the eye ball (anterior chamber) with or without magnet	50.00
Extraction of foreign body from inside the eye ball (posterior chamber) with or without magnet	75.00
Enucleation of eye ball, which must include implantation, including after care	75.00
Iridectomy, including after care	75.00
Complete ophthalmologic examination and report	10.00
Refraction, when authorized by the Commission	5.00
Office visits	2.00
Home visits	3.00
Hospital visits	3.00
Fractured nose, including after care	50.00
Deviated septum, including after care (submucous resection)	75.00
Ruptured ear drum, first visit	3.00
Additional visits	2.00

Mastoidectomy—one side, including after care	125.00	Bladder	6.00
Mastoidectomy—bilateral, including after care	150.00	Including pyelogram-cystogram	15.00
Laceration conjunctiva—sutures (after care extra)	10.00	Intravenous pyelogram	15.00
Laceration of lids, sutures (after care extra)	10.00	Wrist	5.00
Ectropion—by agreement.		Both wrists	10.00
Secondary repair of orbit—reasonable fee by agreement.		Therapy treatment: by arrangement and agreement.	
Traumatic cataract, single, including after care	100.00	All x-ray charges are to be based on examinations for diagnosis, irrespective of the number of films required.	
Traumatic cataract, bilateral, including after care	200.00	Follow up x-ray examinations to be made for 50 per cent less than the original cost.	
Complete examination ears for hearing	10.00	Charges not enumerated above are to be handled by arrangement and agreement.	
Bronchoscopy—removal foreign body	100.00	X-RAY EXAMINATIONS MADE BY QUALIFIED ROENTGENOLOGIC SPECIALIST	
Tracheotomy, after care extra	50.00	Ankle	\$ 7.50
X-RAY BY INDUSTRIAL SURGEON		Ankle and foot	7.50
Ankle	\$ 5.00	Arm, lower $\frac{3}{4}$	7.50
Ankle and foot	5.00	Arm and Shoulder	10.00
Arm, lower and $\frac{3}{4}$	6.00	Back (see spine and pelvis).	
Arm and shoulder	10.00	Bladder (see urinary tract)	10.00
Back (see spine and pelvis).		Chest (heart, lungs and great vessels):	
Bladder (see urinary tract)	10.00	(a) Single plate or stereoscopic	10.00
Chest (heart, lungs and great vessels):		(b) Fluoroscopic study, no additional charge if roentgenograms have been made.	
(a) Single plate or stereoscopic	10.00	Fluoroscopic study alone	5.00
(b) Fluoroscopic study, no additional charge if roentgenograms have been made.		Clavicle (stereoscopic—2 views)	10.00
Fluoroscopic study alone	3.00	Colon (see gastro-intestinal)	20.00
Clavicle	5.00	Elbow	7.50
Clavicle (stereoscopic—2 views)	10.00	Ear (see mastoids).	
Colon (see gastro-intestinal)	10.00	Eye (to determine presence of foreign body)	10.00
Elbow	6.00	Localization, \$25.00.	
Ear (see mastoids).		Facial bones	\$10.00 to 15.00
Eye (to determine presence of foreign body)	6.00	Femur (lower $\frac{3}{4}$)	10.00 to 12.50
Localization, \$10.00 additional.		Femurs, both	15.00
Facial bones	10.00	Finger, two views on one plate	5.00
Femur (lower $\frac{3}{4}$)	6.00	Foot	7.50
Femurs, both	10.00	Forearm	7.50
Finger (two views on one plate)	5.00	Forearm, part including wrist joint	7.50
Foot	5.00	Forearm, part including elbow joint	7.50
Forearm	6.00	Feet, One foot	7.50
Forearm, part including wrist joint	6.00	Two feet	12.50
Forearm, part including elbow joint	6.00	Gallbladder	\$10.00 to 20.00
Feet (both on one plate)	6.00	Gastro-intestinal tract with barium	25.00
Gallbladder	6.00	Esophagus, alone	10.00
Gastro-intestinal tract, with barium	17.50	Stomach, alone	15.00
Esophagus, alone	7.50	Colon, alone	20.00
Stomach, alone	10.00	Hands (one)	7.50
Colon, alone	10.00	Both	10.00
Hands (one or both)	5.00	Head	\$15.00 to 20.00
Head	10.00	Hip Joint	12.50
Hip Joint	10.00	Humerus, below shoulder	7.50
Humerus below shoulder	6.00	Jaw (upper)	10.00
Jaw (upper)	10.00	Jaw (lower), one side	10.00
Jaw, lower (one side)	6.00	Jaw (lower), both sides	10.00
Jaw, lower (both sides)	10.00	Kidney (see urinary tract)	10.00
Kidney (see urinary tract).		Knee	7.50
Knee	6.00	Leg	7.50
Leg	6.00	Legs (both)	12.50
Legs (both)	10.00	Mastoids	15.00
Mastoids	10.00	Nasal bones	10.00
Nasal Bones	6.00	Neck (see spine).	
Neck (see spine).		Pelvis	12.50
Pelvis	10.00	Pyelogram (see urinary tract)	15.00
Pyelogram (see urinary tract).		Ribs	12.50
Ribs	10.00	Sacro-iliac joints	10.00
Sacro-iliac joints	10.00	Shoulder	10.00
Shoulder	6.00	Sinuses	10.00
Sinuses	6.00	Spine, one section	15.00
Spine (one section)	6.00	Two sections	15.00
Two sections	12.00	Entire spine	25.00
Entire spine	15.00	Teeth (single plate)	3.00
Teeth (single film)	3.00	Not over six	6.00
Not over six	6.00	Toes (single plate)	5.00
Toes (single plate)	3.00	Urinary Tract:	
Urinary Tract:		Both kidneys, ureters and bladder	10.00
Both kidneys, ureters and bladder	10.00	Bladder	10.00

Including pyelogram-cystogram	15.00
Intravenous pyelogram	20.00
Wrist	7.50
Both wrists	10.00
Therapy treatment: by arrangement and agreement.	
All x-ray charges are to be based on examinations for diagnosis, irrespective of the number of films required.	

Follow up x-ray examinations to be made for 50 per cent less than the original cost.

Charges not enumerated above are to be handled by arrangement and agreement.

FEES FOR PATHOLOGY AND CLINICAL PATHOLOGY Blood

Wassermann	\$ 5.00
Wassermann, any modification	5.00
Precipitation, Kahn or others	5.00
Any two of above	7.50
Complement fixation G. C.	5.00
Full blood count	7.50
White count and differential	3.00
Coagulation time	2.00
Sedimentation test	3.00
Fragility test	5.00
Platelet count	2.00
Full test—hemorrhagic diathesis	10.00
Icteric index	2.00
Special culture, blood	10.00
Widal	3.00
Simple culture	5.00
Bilirubin Van den Bergh	3.00
Malaria, plus red count	2.00
Typing and grouping	7.00
Cross agglutination tests	5.00
Additional per person	2.00
Urea nitrogen	3.00
Non-protein nitrogen	2.00
Uric acid	3.00
Cholesterolin	5.00
Creatinine	3.00
Sugar	3.00
CO ²	5.00
Any four tests of the above	10.00
Calcium	7.00
Magnesium	5.00
Phosphorus	7.00
Chlorides	3.00
Any three of the above	12.00
Lactic acid	3.00
Hydrogen ion concentration	3.00
Albumin-globulin ratio	10.00
Friedman test	10.00

Urine

Routine, chemical qual. no micro.	2.00
Routine, chemical qual. with micro.	3.00
Routine, chemical and micro. and quant. sugar	5.00
Arsenic or lead (heavy metals)	10.00
Quantitative urea	2.00
Quantitative creatinine	2.00
Quantitative uric acid	2.00
Quantitative ammonia	2.00
Quantitative chlorides	2.00
Quantitative total nitrogen	2.00
Above five tests	10.00
Phthalein	2.00
Urobilin quantitative	3.00
Tyrosin	3.00
Mosenthal or other conc. test	5.00
Simple culture	5.00
Special culture	5.00
Ureter specimens, urea, micro and cultures, both sides	15.00
Tuberculosis—extra	3.00
Animal inoculation	10.00

SPINAL FLUID

Wassermann	5.00
Precipitation	3.00

Colloidal gold test	3.00
Cell count	2.00
Globulin	2.00
Simple culture	5.00
Smear for bacteria	2.00
Tubercle bacilli	3.00
12-hour sedimentation test	5.00
Full spinal fluid exam. for syph., Wass., Col. gold, cell, glob	10.00
Animal inoculation	10.00
Spinal puncture	10.00

Frozen Section

In hosp., path. at operation	15.00
Outside	\$5.00 to 10.00
Routine tissue	5.00

Miscellaneous Items

Throat culture, diph., strep.	5.00
Smears, all, except otherwise noted	3.00
Search for bacilli in exudates	3.00
Sputum for T. B.	3.00
Simple sputum culture	5.00
Special sputum culture	5.00
Sputum microscopic	2.00
Vaccines sputum or autogenous	10.00
Typing of pneumococcus	10.00
Fungus exam. and culture	10.00
Allergy test, plus cost of material	25.00
Dark field, no charge for smear venereal, etc.	5.00
Stomach contents for ferments	5.00
Ewald or retention	5.00
Fractional Rehfus	5.00
Bacteriophages	10.00
Calculi	5.00
Routine gastric analysis	6.00
Parasites	3.00
Typhoid and para cultures	5.00
Micro. for bacteria, etc.	3.00
Urobilin	3.00
Urobilin, quant	5.00
Histamine	3.00
Occult blood only	2.00
Ferments	5.00
Simple culture	5.00
Special culture	5.00
Fats—quant	5.00
Basal Metabolism	10.00
Immunology and allergy	25.00
Spinal puncture with manometric determination	10.00
Complete post-mortem and report without micro. work	50.00
Complete post-mortem and report with tissue micro. examination	75.00
Other post-mortem laboratory work as scheduled above.	
When pathologist visits patient's home or other place to obtain specimen, add \$3.00 for home visit to the above items.	

The attending physician will not make charge for obtaining specimen, except spinal puncture (\$10.00).

In their case of glycosuria resistant to insulin HOWARD H. MASON and GRACE E. SLY, New York (*Journal A. M. A.*, June 12, 1937), could almost stop the glycosuria by the substitution of levulose or galactose for dextrose in the diet. There is evidence to show that the patient was able to burn dextrose freely without the help of injected insulin. They suggest that the difficulty is due to a marked lessening of the liver's ability to convert dextrose to glycogen or an intermediary product in this conversion. If their interpretation of the physiologic disturbance manifested by this patient is correct, it is rendered likely that in normal human subjects the precursors of dextrose are all changed to glycogen or at least undergo some preliminary step of this conversion before they can become dextrose.

THE TREATMENT OF THE HEART
IN HYPERTENSIVE DISEASE*

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Hypertensive heart disease may be defined as a permanent, organic change in the cardiac muscle resulting from an established elevation of the blood pressure and leading to cardiac hypertrophy and eventual failure. Fifteen per cent of all adults have hypertension and 23 per cent of all deaths of persons over fifty years of age are directly attributable to it. The hypertensive state may occur in aortic insufficiency, in hyperthyroidism and acromegaly, in chronic glomerular or diffuse nephritis, in association with general arteriosclerosis, and as a functional condition developing independently of anatomic changes in either the kidneys or the arteries and without known cause (essential hypertension). According to statistics of the Metropolitan Life Insurance Company, diseases of the heart and kidneys cause four times as many deaths as cancer¹.

The significant role played by the heart in the prognosis and treatment of hypertensive disease is well illustrated by the fact that heart failure is the most important factor in sixty of every hundred deaths from the effect of hypertensive disease. The chief factors responsible for the high incidence of cardiac morbidity in hypertension are prolonged functional overstrain and nutritional impairment of the myocardium from the ravages of coronary sclerosis. An hereditary predisposition to this disease is frequently present. It has been said that it is often "more important to know what kind of a patient has the disease than what kind of disease the patient has." The great importance of the coronary factor has been proved during the last decade by the antemortem use of the electrocardiograph and the postmortem examination of the coronary arteries.

A prominent clinical feature of hypertensive heart disease is cardiac hypertrophy. Every hypertrophied heart is pathologic, already progressing to eventual failure. A blowing systolic murmur localized or diffused over the precordium is frequently present, resulting from the hypertrophy of the heart and

dilatation of the mitral ring causing relative mitral insufficiency. It has erroneously been taught that this murmur must be present before a diagnosis of hypertensive heart disease can safely be made. In the absence of hyperthyroidism, auricular fibrillation developing in a person with hypertensive disease is sometimes due to a sublethal coronary occlusion.

Besides the usual history and physical examination, the patient with hypertension deserves an electrocardiographic examination, a basal metabolic test, a fluoroscopic examination, a red cell blood count and hemoglobin estimation and the three-minute, exercise pulse-rate test. The electrocardiograms of hypertensive patients most commonly display a left axis deviation indicating left ventricular preponderance resulting from functional overstrain. In some obese persons with high diaphragms and no hypertension a left axis deviation is seen in the electrocardiograms but the degree of deviation is helpful in establishing the extent of or the presence of myocardial disease.

Sclerosis of the peripheral arterioles is now thought to be the factor causing the permanent elevation of the diastolic blood pressure. Other than old age the cause of arteriosclerosis has never been satisfactorily established. It is probably a deficiency disease inherent in the germ cells of an individual and hastened or retarded according to the strains placed upon the person throughout life. Contrary to the older conception, there is no actual inflammation of the heart muscle (chronic myocarditis) in uncomplicated cases. The usual microscopic changes found in hypertensive hearts are patches of fibrosis and slight infiltration with lymphocytes and plasma cells. These changes are secondary to the associated coronary disease.

Early Symptoms of Cardiac Failure

The earliest symptoms of cardiac failure may be grouped in the anginal or the myocardial syndromes. Being entirely subjective and often indefinite they are frequently misinterpreted. The myocardial syndrome is most frequently encountered and the earliest symptom is a slight effort dyspnea or unaccustomed fatigability. A slight but persistent cough, nocturia, nocturnal dyspnea, or epigastric discomfort well illustrate the myocardial syndrome.

*Second alternate paper on the program of the Medical Association of Georgia, Macon, May 12-14, 1937.

The following symptoms, particularly when influenced by effort, are highly suggestive of the anginal or coronary syndrome: paroxysmal pains beneath the sternum, in the neck, jaws, or roof of the mouth; aching pains in the wrist, elbow or shoulder, usually on the left side; obscure epigastric pain, pressure or burning sensation.

The Prevention of Impending Cardiac Failure

A person with hypertensive heart disease should have more rest than a normal person. Besides the eight to ten hours night rest they should have two hours bed rest daily soon after lunch. Insistence on this one point frequently results in considerable improvement in the patient's condition. Most of the patients are in a state of conscious or subconscious hypertension and require sedatives as well as coronary and peripheral vasodilators which have a tendency to lower the blood pressure. The bromides, iodides, barbitals, nitrites, cyanates and the xanthine preparations are useful as regulatory drugs in small repeated doses.

Dietary regulation relieves the heart of unnecessary effort. If obese patients are adequately reduced, the efficiency of the heart is increased by a lessening of the amount of work required of it. In the control or reduction of weight, the fats should be practically eliminated from the diet and the patient should be forced to burn his own fat by a liberal intake of carbohydrate. Most authorities agree that protein foods stimulate the heart with an impaired myocardium more than is desired. For this reason the protein intake for the adult should be limited to 50 or 60 grams daily. The necessary vitamins and minerals may be included in the diet in the form of tomato juice, orange juice, skimmed milk and the leafy vegetables. For the average adult, a diet providing 1,000 to 1,400 calories a day is advisable. If hunger or exhaustion are experienced between meals, glucose mixed with fruit juice or in tablet form should be administered every two or three hours. The importance of eating the lightest meal at night and the heaviest meal at noon should be emphasized. Only small amounts of fluids should be allowed after four in the afternoon and attention to bowel evacuation and urination before retiring are

essential to insure a good night's rest and tend to prevent attacks of nocturnal dyspnea which so many of these patients suffer.

A slight anemia is frequently encountered in patients with hypertensive heart disease. The type of anemia is usually secondary but a steadily increasing percentage of patients with pernicious anemia and hypertension has been noted in recent years. I advocate the use of liver extract in both types of anemia. One cubic centimeter of liver extract injected intramuscularly twice a week will give a definite improvement in the strength and well-being of the patient. It is well to prescribe iron in these cases but the results will not be as great as those following the use of liver.

Digitalis is a valuable drug in the treatment of hypertensive heart disease even in patients with a regular cardiac rhythm. In cases complicated by auricular fibrillation or flutter its use is imperative. The chief indications for the use of digitalis in uncomplicated cases with regular rhythm are the presence of tachycardia, or the signs of congestive heart failure when the patient is at rest. Definite improvement may be expected by digitalization and maintenance doses of digitalis in such cases. The dose of digitalis is 20 to 30 grains of the powdered leaf or its equivalent, given over a period of 48 to 72 hours, depending on the size of the heart, weight of the patient and the potency of the drug. The maintenance dose of digitalis is usually from 1.5 to 3 grains daily, depending upon the weight and reaction of the individual patient, and the potency of the preparation used.

Surgery in Hypertensive Heart Disease

Enough evidence has accumulated to prove that there is a relative constriction of the arteriolar system of the body in hypertension. In the beginning of the disease the elevation of the blood pressure is probably caused by an abnormal response to vasomotor stimuli, but as the disease progresses there must be definite changes in the walls of the arterioles themselves. Whether the influence for the constriction of the arterioles is exerted by thyroid overactivity or whether the abnormal impulses come from the sympathetic nervous system has not yet been proved. If a persistent thyroid overactivity can be demonstrated or if the blood pressure fluctuates wide-

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

SEPTEMBER, 1937

THE FEE SCHEDULE FOR INDUSTRIAL WORK

On other pages of this issue of THE JOURNAL appears a minimum medical and surgical fee schedule for industrial work, adopted by the Council. You are urged to preserve this copy for future reference since it will incur additional expense to supply other copies. This is the outcome of a demand by members of this Association who do industrial work, and at the last session of the Association a Sub-Committee on Medical Economics was appointed to draft a fee schedule applicable to this type of service.

The Sub-Committee met promptly, accomplished its task and was called together to report the results of its deliberations to the Committee on Medical Economics. The report was approved by the latter Committee, submitted to and adopted by the Council.

After two postponements, Dr. C. F. Holton, Savannah, chairman, Sub-Committee on Medical Economics; Dr. Grady N. Coker, Canton, president-elect; Dr. Edgar D. Shanks, Atlanta, secretary-treasurer; and the writer, met the Industrial Relations Board on August 17th. We were cordially received and permitted to state our claims. Representatives of the insurance companies were present and explained their former satisfactory arrangements with physicians and asked for time to submit the fee schedule to their respective companies. The Industrial Relations Board assured us that its final ruling on the fee schedule will be made on September 21st.

Interested physicians are urged to be present at this meeting as this is of vital importance to the profession in Georgia. The men assigned to do this work have donated liberally their energy, time and talent. Your support should be freely given to the Committees, Council and the Association in our efforts to have this fee schedule adopted by the Industrial Relations Board. We have as-

surance of a favorable decision, yet your whole-hearted support is essential. Minor adjustments may be expedient, of which you will be informed through THE JOURNAL.

GEO. A. TRAYLOR, M.D., *President.*

PUBLIC RELATIONS BUREAU

One hundred thirty-three years ago the first medical society in the State, the Georgia Medical Society at Savannah, was requested to cooperate with the officials of that city in eradicating certain death-dealing diseases, such as smallpox, cholera, malaria, yellow fever and typhoid fever. Savannah's population at that time was only 5,000, but her officials were alarmed — her citizens were dying by the scores and the gateway to the sea had been closed to the commerce of the world. Georgia Medical Society's seventeen physician members studied conditions and recommended that the city of Savannah purchase a large tract of land, and that the land be drained. All rice fields in and around the city were purchased and work was started on the first health drainage program in the State, at a cost of \$200,000 to the city's too few inhabitants.

Since that time all physicians in Georgia have participated in many health programs for the benefit of the people. Progress in any field of endeavor, regardless of location, is largely in proportion to the health of the people. Sickness is always expensive, not to mention loss of life; preventive measures to lessen disease cost little when developed along scientific lines. Health cannot be purchased, but measures to promote health and avoid disease are priceless commodities and should be utilized by every civilized country. Georgia's health program is largely dependent upon her physicians, but the success of any program which involves the health and life of each citizen must be the responsibility of all the people. To this end, THE MEDICAL ASSOCIATION OF GEORGIA is establishing a Public Relations Bureau.

Some of the immediate objectives of this important physician-citizen educational campaign are: (1) Inform prospective mothers of the necessity of obtaining proper pre-natal care so that their lives, and the lives of their unborn children, will not be jeopardized. At

the present time there are five hundred tragic maternal deaths in the State each year, most of which are unnecessary. (2) Educate the people to take advantage of all known scientific procedures for the prevention of disease. (3) Cooperate with the State Department of Public Health and the Department of Public Welfare in eradicating all communicable diseases, and rendering aid to crippled children and the blind. (4) Furnish aid in cancer control. The Medical Association of Georgia has worked for more than twenty years to educate its members and the citizens of the State to recognize and seek early treatment for cancer. At the last session of the Legislature the Association sponsored a cancer bill which was enacted into law and makes available to indigent cancer patients State aid in combatting the disease. The cancer program is supervised by the State Department of Public Health. (5) More effective measures for the control of tuberculosis. (6) Educate the citizens of the State in regard to other measures affecting their health, including enlightenment as to medical education, medical practice, hospitals, clinics, and the necessary laws required to properly expedite the care of the indigent sick.

CORONARY THROMBOSIS VS. DISSECTING ANEURYSM IN DIFFERENTIAL DIAGNOSIS

L. MINOR BLACKFORD and CARTER SMITH, Atlanta, Ga. (*Journal A. M. A.*, July 24, 1937), report a case of dissecting aneurysm of the aorta that occurred in a highstrung, hypertensive, fat man, aged 61; the diagnosis was definitely made before necropsy. Death occurred from rupture of the dissecting aneurysm into the pericardium thirty-six hours after the original break through the intima. The long history of hypertension, the agonizing, tearing pain as though something had been "torn loose inside," the temporary loss of vision, the nausea, the vomiting, the shock, the murmurs at the aortic region and the absence of pulsation in one extremity, the period of relative comfort with the dramatic death on slight effort, and the rupture into the pericardium in this case were all typical of dissecting aneurysm of the aorta, as McGeachy and Paullin have recently pointed out. The diagnosis of dissecting aneurysm of the aorta should be made without difficulty, if it is taken into consideration in differential diagnosis. In spite of the rarity of the condition, therefore, it is exceedingly important to make the diagnosis to prevent too much being done and to keep the patient as comfortable and quiet as possible in the hope that he will recover with a double-barreled aorta.

OUR DUTY TO THE PUBLIC

The Hebrews of biblical times were the first, so far as history records, of a people who were taught and practiced disease prevention. The means now at hand for informing the public are so much more efficient than existed at the time of Moses; yet, he taught sanitary measures whose usefulness the passage of centuries has not effaced. How much more we owe the public of today because science has supplied us with facts probably not known by the great Hebrew law giver!

If the medical profession desires that sympathy, encouragement and support from the laity that it so much needs for carrying out idealistic measures for the public good we must "take the people into our confidence" and inform them. It is our duty to do so, and the task should be assumed with an enthusiasm and support that will leave no ground for questioning our earnestness and altruism. This campaign of enlightenment should be placed on an impersonal basis for family physicians are frequently embarrassed; and, sometimes, rebuffed when advice is given gratuitously.

Your association — THE MEDICAL ASSOCIATION OF GEORGIA—is making a concrete effort through its Bureau of Public Relations to accomplish this laudable aim, but it will require financial backing. The Association needs the aid of every physician in Georgia to carry through a campaign of public enlightenment that will redound to the credit of our organization, but, of far more worth, to the general betterment of health and living conditions in our commonwealth.

Physicians must point the way and lead the procession.

GEO. A. TRAYLOR, M.D., *President.*

EIGHTY-NINTH ANNUAL SESSION OF THE ASSOCIATION—DATES CHANGED

By authority vested in the Council of the Medical Association of Georgia under Article VII, Section 1 of the Constitution, and on petition of the Richmond County Medical Society; the Council has changed the dates for the eighty-ninth annual session of the Medical Association of Georgia to April 26, 27, 28, 29, 1938.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

THE HEALTH DEPARTMENT AND THE PHYSICIAN

THE MEDICAL ASSOCIATION OF GEORGIA has led the nation in its public health program. No other state health department has had more active cooperation and support or more sympathetic understanding of organized medicine than has the Georgia department.

Many points of misunderstanding that have arisen in other states and sections were definitely settled for Georgia when in 1935 the Medical Association of Georgia adopted a definite policy relating to the proper activities of a public health department. Whatever success that may have been attained by the Georgia Department of Public Health during the last quarter of a century is due to this definite understanding of the doctors of the problems of the health department and vice versa, and their mutual cooperation.

The aim and goal of the public health department and the physicians are the same, better health and greater happiness for the community. Although different roads are used to reach this objective, there is no need for friction if each understands what the other is trying to do and has some idea of the methods to be used to attain the end sought. Health departments may make many requests of the physicians, but they are not usually unreasonable, and may be very essential to the program of the department.

The physicians may sometimes think the health department is unduly concerned with reporting births and deaths, and in insisting that every detail of these certificates be properly executed. These certificates become the permanent record of the State, and if not properly filled out are not only of little value, but may cause considerable embarrassment, and even material loss to the effected individual in later years. The health officer also finds these certificates of inestimable value to him in keeping up with the health status of his district.

The prompt recognition and reporting of communicable diseases is essential in the control of these diseases. Epidemics of typhoid fever, smallpox, diphtheria and other infectious diseases may often be stopped before they begin if the first cases are reported promptly. The machinery for making these reports has been made as simple as possible, and most Georgia doctors cooperate with their local health officer in this respect.

Immunization programs of local health departments have probably caused more misunderstanding between the health officer and the physicians than any other. Some physicians feel that the health department should not administer immunizing agents to any one, while others say it is proper to immunize only the indigent and refer others to the family physicians. An answer to this is, that the plan has been tried in Georgia and elsewhere and has failed. Dr. W. G. Smillie of Harvard University, has the following to say on this subject:

"The logic of the health department is clear-cut. A given disease is prevalent in the community, or is at least a potential menace, and may occur at any time, causing suffering and loss of life. An effective method of prevention is at hand, namely, mass immunization of the community. Prevention of outbreaks can only be assured when a large proportion of the non-immune population subject to exposure has been properly immunized. Through well recognized channels of mass education and appeal, the community can be advised of the facts. It is the obvious duty of the health department to offer this mass immunization to the community and thus secure practically complete immunity from invasion. Since the health department is supported by taxation it cannot discriminate between those who can afford to pay for this service and those who cannot. The department should urge that individuals go to their own private physicians, and should furnish biological products to the doctors, either free, or at cost. But any citizen who brings his child to the health department to be immunized against smallpox, diphtheria or typhoid fever should be given this service free of charge. Experience has shown repeatedly that mass immunization procedures do not rob the physician of his legitimate practice, but rather increase his office visits for the specific procedure five to ten fold. . . . It must be generally conceded as a fundamental principle that the health department should do as little clinical work as possible, compatible with protection of the general health of the community. The health department has undertaken clinical activities because of the obvious immediate necessity. It must allocate these activities to practicing physicians as fast as the medical profession will accept responsibility for them. Whenever mass immunization will prevent outbreaks of disease, however, the health department is under obligation to carry out immunization at public cost by the most effective and least expensive means. The health department considers the community as a unit and not the individual. Mass immunization is done to protect the community. Incidentally, individuals may be safeguarded, but the primary purpose is community protection."

In the control of tuberculosis the case finding and consultation service of the State Department of Health, and the service of follow-up by the county health department and itinerant nurses have, in the main, received the approval of the physicians. The resulting decrease in morbidity and mortality has been pleasing to both. By some syphilis is put in the same class with tuberculosis from a public health viewpoint. They are both chronic

in nature, requiring long, continuous care and control. In each the individual case is, or may be, a source of infection of others. The control of either disease depends upon early finding of cases and quickly rendering them non-infectious. The control of both diseases requires that contacts as well as active cases be sought for and examined. A close cooperation of the health department and the physicians in a venereal disease control program will give results equal to those attained in tuberculosis control.

The obvious urgent need for more adequate prenatal, infant and preschool care has resulted in most health departments' organizing clinics for this purpose. The health department clinics do not administer treatment, but are for the purpose of improving the health of mother and children. Cases that deviate from the normal are at once referred to the family physician. When abnormal conditions arise in prenatal cases, the patient and the midwife engaged to deliver her are notified that a physician must be engaged for the delivery. Here, as elsewhere, the health department prefers that these cases go to the family physician, and so advises.

Two present day conditions must be corrected before this Utopia can be reached. First, a large portion of our people must be taught the need for and benefits to be derived from this procedure. This will be the outstanding result of the health department clinics as has been demonstrated time and time again. Second, economic conditions must be improved so that all classes can afford the expense. The remedy here is not so easy as in the first instance, although health education is a Herculean task. "The poor we have with us always." Here again cooperation of the health department and the private physicians will be mutually beneficial.

The health department's school hygiene program has for its aim the promotion and protection of the health of the school child. Teachers, janitors and other employees of the school are checked for infectious diseases. The child is examined for defects and if such are found the child is referred to the family physician. The follow-up is to urge that this be done. The correction of defects of school children is not a proper function of the health department.

This article is concluded by quoting Dr. W. G. Smillie of Harvard University in his book: "Public Health Administration in the United States." Dr. Smillie might well be describing conditions in Georgia when he says: "The health officer should make every effort to win the confidence, friendship and approval of the organized medical body of the community. . . . The medical society should have a special public health commit-

tee. This committee should deal directly with the health officer, should aid and advise him in his programs, and should interpret his policies and activities to the medical profession. The health officer should go out of his way to aid physicians individually and collectively. He should give them every consideration and all the recognition to which they are entitled. . . . He should be abreast of the times clinically, should be a member of the local medical society, and should take an active part in the affairs of the organization. The membership of his board of health should always contain one or more representatives, public-spirited physicians. In brief, the relationship between the health department and the medical profession of the community should be one of mutual trust, confidence and respect. Each should have a proper consideration for the point of view of the other. Together they should work out a co-operative program that will be of greatest benefit to the community."

GUY G. LUNSFORD, M. D., *Director,*
County Health Work.

THE TREATMENT OF THE HEART IN HYPERTENSIVE DISEASE

(Continued from Page 473)

ly and reaches low levels at times, a thyroidectomy or a sympathectomy to interrupt the vasomotor impulses is frequently beneficial. Certain patients do not respond to therapeutic measures and remain for many months in a state of chronic cardiac congestion. In selected cases a complete removal of the thyroid gland will reduce the metabolic needs of the body and decrease the disproportion between the demands on the heart and its ability to respond. If the blood pressure is fixed at high levels, surgical treatment is usually of little value.

Treatment Following Cardiac Failure

With the development of myocardial insufficiency it is imperative that a period of bed rest or chair rest be instituted. Many patients should not be allowed to be flat while sleeping for the first few days after the onset of acute heart failure because of the increased dyspnea which attends the frequent "sudden awakening" attacks which they experience. Many patients are more comfortable in a chair with a high back at an angle of 60 degrees than they are in a bed propped against a number of pillows.

Morphine should be used freely in sufficient amounts to induce deep sleep for ap-

proximately 18 hours a day for the first few days or until the acute dyspnea and anxiety have subsided. In my experience the best preparation of morphine for the treatment of cardiac patients is dihydromorphinone hydrochloride (dilaudid). A dose of 1/32 grain every 6 to 8 hours is usually sufficient to promote regular sleep. To overcome the depressing effects of morphine, 3 grains of caffeine should be prescribed with each dose of morphine.

Following the acute stage of dyspnea and improvement in the condition of the patient a mild sedative, such as phenobarbital or a bromide, may be employed to relieve nervousness or anxiety but morphine should always be given without hesitation when a reappearance of severe dyspnea occurs.

Many rules have been devised for giving digitalis. It is best to adapt the method to the needs of the patient. Three grains of digitalis should be administered every 4 hours for seven or eight doses or until the patient begins to exhibit the desired effect. Patients of light weight will require less digitalis than patients of heavy weight. If there is much portal congestion the digitalis should be given by hypodermic injection.

If edema is marked or persistent, the total fluid intake should be limited to not more than 1000 cc. daily for two or three days, after which a restricted menu may be given which is practically free of sodium chloride. To make the food more palatable potassium chloride may be used, because it is the sodium ion and not the chloride ion that is chiefly responsible for edema formation².

The most effective xanthine diuretic is theophyllin which may be given in doses of 0.3 gram three or four times daily for one to three days. If given in large doses or over long periods of time, this drug is likely to produce nausea and vomiting.

In recent years important advances have been made in the treatment of patients with massive edema by the use of the mercurial diuretics. The two most effective are mersalyl (salyrgan) and mercurin, which is prepared from d-camphoric acid and a racemic substitute propylamine. Salyrgan should never be given subcutaneously but may be given intravenously or by deep intramuscular injection

in doses of 1 or 2 cc. daily or every other day until diuresis has been stimulated.

Mercurin is made in the form of cocoa butter suppositories for rectal administration. Each suppository contains 0.2 gram mercury. The usual dose is one suppository every three to five days, according to the requirements of the individual patient. The diuretic action of the mercurial drugs is augmented by the giving of ammonium chloride by mouth in doses of 90 to 150 grains daily in the form of enteric coated tablets of 7½ grains each, for one or two days before the treatment is begun. The mercurial diuretics should be given in the morning to avoid disturbing sleep by frequent urination at night. The chief contraindications for the use of these diuretics are: acute nephritis, enteritis with diarrhea, mercurial hypersensitivity and chronic nephritis in the advanced stage.

Oxygen should be employed for the relief of dyspnea when other measures have failed. In patients unable to retain food because of nausea and vomiting, glucose intravenously furnishes ready strength to the heart muscle and increases diuresis.

REFERENCES

1. Adson, A. D., and Allen, E. V.: Essential Hypertension: I General Considerations. Proc. Staff Meetings, Mayo Clinic, Vol. 12 (Jan. 6) 1937.
2. Harrison, T. R.: Failure of the Circulation, Williams and Wilkins, Baltimore, p. 301, 1935.

CALCIUM ORTHO IODOXYBENZOATE IN THE TREATMENT OF ARTHRITIS

Cohen (Clin. Med. & Surg., 44:341, Aug., 1937) reports on a series of 125 cases of classic atrophic arthritis where calcium ortho-iodoxybenzoate was the only drug therapy used. With those patients receiving therapy over a considerable period, 5 per cent were regarded as cured; 43 per cent very much improved; and 22 per cent somewhat improved. This represents a total of 70 per cent who received definite benefit from the drug. The dose employed was usually from 2 to 4 times that heretofore recommended and varied between 3 and 6 gms. daily. While this increase resulted in a greater incidence of intolerance, it is advocated on the basis of greater therapeutic efficiency. Neither age nor sex appeared to be of significance as regards the efficacy of calcium ortho-iodoxybenzoate (Oxo-ate "B") and no particular type of atrophic arthritis was benefited more than another. Complete hematological examinations and laboratory tests indicated that the drug has no effect on the red or white blood cells, heart or kidneys even when taken over long periods of time. It is concluded, therefore, that calcium ortho-iodoxybenzoate may be safely used in large doses and is a valuable adjunct in the treatment of atrophic arthritis.

WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, La-Grange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

OUR OBJECTIVES—1937-1938

1. To secure an Advisory Committee or a Councillor for each County and District Auxiliary and to be guided in all State activities by the Advisory Committee of the Medical Association of Georgia. Without their sanction, no changes are to be made in the Educational Program.

2. For County and District Auxiliaries that have not done so, to file copies of their Constitutions and By-Laws with the State Auxiliary.

3. In each County Auxiliary to have, if feasible, Chairmen corresponding to the State, Southern, and National Auxiliaries:

Organization

Health Education

Public Relations

Hygeia

Press and Publicity

Historian

Student Loan Fund

Health Films

Legislation

Doctor's Day

Research in Romance of Medicine

Jane Todd Crawford Memorial

4. To present the Health Education Program outlined for us by the Medical Association of Georgia, to all lay organizations; the Medical Association and local Societies appointing the speakers, the Auxiliary supplying approved educational material. The educational program of the Auxiliary includes talks on many health subjects: especially to be stressed are Venereal Diseases and Maternal Welfare. These talks are available through local health education chairmen. These may be used as monthly topics or radio talks. To read them carefully until familiar with them.

5. To assist in the entertainment at County, District, and State meetings, and promote unity and friendliness through social contact. This is conceded to be one of our most important functions. It is our duty to encourage and preserve fellowship.

6. For each County Auxiliary to sponsor a Public Relations Meeting early in the fall.

7. To contribute to the Student Loan Fund, in order that a sufficient sum may be raised, which is to be used to educate Georgia students in Georgia Medical Schools. These students are limited to the families of Georgia physicians. This is a splendid objective. To contribute to the Health Film Library and provide this form of education for Auxiliaries and for the public.

8. To increase our subscriptions to Hygeia, the Health Magazine published by the American Medical Association.

9. To accept Chairmanships of health and public welfare in other organizations, or any office that will advance the work of the Auxiliary.

10. To read and contribute to the news letters and the Auxiliary pages of the Journals of the Medical Association of Georgia, and American Medical Association and to send items of interest to District and State Scrapbook Chairmen.

11. To re-enlist former members and secure the membership of every eligible wife by an active membership campaign.

12. To cooperate with the recommendations of the Southern and American Medical Auxiliaries.

13. To observe March 30th, as Doctor's Day. On this day to have programs of suitable exercises honoring the men who have dedicated their services to the welfare of humanity, and likewise honoring the deceased members of the profession.

14. To make the success of the Auxiliary, an individual project for this year. Be always Auxiliary minded. The task is to inform yourself so as to inform others. Request organizations to have programs on the Venereal Diseases and Maternal Welfare. To study the basic science law and be prepared to answer questions about it. All such efforts will result in Auxiliary growth and will insure a satisfactory report to be made to the Medical Association of Georgia at the next convention in Augusta, 1938.

MRS. RALPH H. CHANEY, *President*.

OUR CANCER PROGRAM

An aggressive educational campaign for cancer control has been waged by THE MEDICAL ASSOCIATION OF GEORGIA since the summer of 1918. From year to year this campaign has gained momentum until our citizens have become so cancer-minded that they demanded not only education but treatment for the ever increasing number of cancer sufferers unable to secure the proper care at their own expense. As a result an act was passed during the last session of the Legislature, making Georgia the first state in the southeast to give state aid to indigent cancer patients. The Department of Public Health was authorized to establish departments for the diagnosis and treatment of cancer in general hospitals located at points most accessible to the poor people to whom such service should be rendered. An appropriation of \$50,000 was made for this purpose.

In preparing our bill we studied carefully the work done in other states, and finally decided to model it after the Massachusetts program which embraces four major activities: (1) diagnostic clinics; (2) popular and professional education; (3) statistical research; (4) a central treatment hospital. The area of Georgia is more than seven times greater than that of Massachusetts, so one central hospital was considered impractical; therefore two of the Massachusetts activities were combined in creating cancer departments in general hospitals where both diagnosis and treatment should be given.

Our educational work is to be continued and the department is expected to gather such statistical data as will be of educational value in outlining our treatment program from year to year. The state aid clinics in Massachusetts are administered by committees appointed by the local medical society, while in Georgia the Department of Public Health is directed to confer with a group of doctors appointed by the President of the State Medical Association.

The educational program will be broadened and greatly extended. Arrangements have already been made for full cooperation with the Cancer Commission of the Medical Association of Georgia and the Women's Field Army of the American Society for the Control of Cancer. The latter, under the leadership of Mrs. H. B. Ritchie and her five thou-

sand co-workers, will reach every group and organization in the State. Georgia's three thousand doctors will also join in spreading the "message of hope" that cancer can be prevented, early cancer is curable, and a thorough physical examination by your family physician is your greatest safeguard.

Georgia's facilities for the diagnosis and treatment of her two thousand indigent cancer patients are ample and well located. The Department of Public Health and Conference Committee have approved the minimum standard for cancer clinics, as recommended by the American College of Surgeons. It is hoped that the day is not far distant when all of these activities will be working so that the needs of the ever increasing cancer patients may be properly met.—J.L.C.

NEWS ITEMS

DR. A. W. REHBERG, Cairo, returned recently from Mayo Clinic, Richester, Minnesota, where he took postgraduate work for several weeks.

DR. THOMAS O. VINSON, formerly of Macon, has been elected commissioner of health for Spalding county and Griffin health officer.

DR. FRANK P. HOLDER, formerly on the staff of the Milledgeville State Hospital, has moved to Eastman and will be associated in practice with Dr. J. Cox Wall.

DR. L. S. BOYETTE, Ellaville, is building a clinic which he expects to have completed and ready for occupancy at an early date.

DR. MARIAN E. FARBER, recently engaged in practice at Chicago, accepted the position as physician for the Georgia State College for Women at Valdosta.

DR. E. B. ANDERSON, Americus, after spending a year in New York City taking postgraduate study in diseases of the eye, ear, nose and throat, has resumed his practice in Americus with offices in the Prather Clinic.

DR. J. ALLEN SMITH, Macon, spoke at a meeting of the Rotary Club at Cochran, July 27th. on *Deafness*. Dr. W. H. Pirkle, Cochran, arranged the program.

A PROMINENT PHYSICIAN wants to communicate with a young doctor who wants to do general practice at a good location. If interested, write the Secretary-Treasurer of the Association.

DR. WM. R. DANCY, Savannah, commander-in-chief of the Georgia Division of the Sons of Confederate Veterans, was master of ceremonies at the dedication of rooms in the Alexander H. Stephens home at Crawfordville, on August 20th.

THE TENTH DISTRICT MEDICAL SOCIETY met at Danielsville on August 10th. Titles of papers on the scientific program were: *Experiences in Bronchoscopy*

at the University Hospital, Augusta, by Dr. W. Eugene Matthews, Augusta; discussed by Dr. S. J. Lewis, Augusta, and Dr. Lewis S. Patton, Athens. *Contraception*, Dr. Melvis O. Corbitt, Augusta; discussed by Dr. A. J. Kilpatrick, Augusta. Address, Dr. Geo. A. Traylor, Augusta, president of the Association. *Abdominal Pregnancy of Eighteen Months' Duration—Case Report, Moving Picture*, Dr. H. W. Birdsong, Athens. *Diverticulitis of Duodenum—Report of Case*, Dr. Stewart D. Brown, Royston. *Summer Diarrhea*, Dr. John A. Simpson, Athens. Address, Dr. Ralph H. Chaney, Augusta, president of the Society.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, August 5th. Dr. W. G. Elliott, Cuthbert, read a paper entitled *Diagnosis and Treatment of Pulmonary Tuberculosis*.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on July 28th. Dr. J. W. Wallace, Douglas, read a paper entitled *Experience with Ergotamine Tartrate*; Dr. T. H. Johnston, Douglas. *Differential Diagnosis of Coma*. No meeting of the Society was held in August. The next meeting is scheduled for September 29th.

THE STEPHENS COUNTY HOSPITAL at Toccoa has been formally opened. Physicians on the Board of Directors are: Doctors C. L. Ayers, E. F. Chaffin, W. C. Curtis, W. B. Heller, J. E. D. Isbell, W. B. Schaeffer, and J. H. Terrell, all of Toccoa, and Dr. W. H. Swain, Martin.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met at the Harrison Hotel, Jefferson, on August 2nd. Dr. L. C. Allen, Hoschton, read a paper entitled *The Rational Treatment of Pain*.

THE WARE COUNTY MEDICAL SOCIETY met at Waycross on August 4th. Dr. B. R. Russell, Waycross, read a paper on *Types of Anesthesia and Postoperative Effects*; discussed by Dr. B. E. Collins, Dr. D. M. Bradley, Dr. W. F. Reavis and Dr. K. C. Walden. Dr. W. F. Reavis, Waycross, discussed *Clinical Developments in Diagnosis and Early Treatment*.

THE FOURTH DISTRICT MEDICAL SOCIETY met at Thomaston, August 11th. Titles of scientific papers on the program were: Dr. Willis P. Jordan, Columbus, read a paper entitled, *Geriatrics*; Dr. C. C. Aven, Atlanta, *The Diagnosis and Treatment of Bronchiectasis*; Dr. Geo. A. Traylor, Augusta, president of the Association, Address; Dr. Philip H. Nippert, Atlanta, *Precancerous Lesions of the Skin*; Dr. W. E. Person, Atlanta, *Anorectal Fistula*.

DR. SAMUEL N. RUBIN, formerly of Macon, has moved to Gordon and will do general practice there. He has been engaged in post-graduate study in New York City for several weeks.

DR. T. F. ABERCROMBIE, Atlanta, has completed twenty years of service as director of the Georgia Department of Public Health. He was honored at a dinner given at the Capitol City Club, Atlanta, on August 11th. Speakers included Governor E. D. Rivers, Mayor Hartsfield of Atlanta, officers of the State Parent-

Teachers Association, State Superintendent of Schools M. D. Collins, and others.

THE CITY-COUNTY HOSPITAL, LaGrange, which has just been completed and equipped with modern laboratory and x-ray facilities, was formally opened on August 15th. It was an open house to the public and hundreds visited the hospital. The business houses and Garden club gave a generous supply of magnificent flowers which were used in profuse decorations. The Hospital Board, Troup County Commissioners, members of the Troup County Medical Society and Auxiliary were hosts to the visitors. They should be proud of their achievement and doubtless have much pride in the success of their efforts.

DR. R. A. BARTHOLOMEW and DR. E. D. COLVIN announce the removal of their offices, on September 1st, from 1040 Ponce de Leon Avenue, N. E., to 1259 Clifton Road, N. E., Atlanta, which is diagonally opposite Emory University Hospital.

DR. Z. V. JOHNSTON, Calhoun, was elected president of the Young Harris College Alumni Association on August 5th.

OBITUARY

Dr. Samuel W. Mims, Sylvania; member; University of Georgia School of Medicine, Augusta, 1878; aged 83; died at his home on July 15, 1937. He practiced medicine in Screven and adjoining counties for more than fifty years. Dr. Mims was one of the oldest and most loved citizens of Screven county. He was public spirited, never selfish, and gave his best efforts for the community as well as for himself and family. He was a member of the Screven County Medical Society and the Association for many years. Funeral services were conducted by Rev. Leonard Cochran and Rev. T. S. Boehm. Burial was in the Sylvania cemetery.

Dr. Frank Willingham Rogers, Ashburn; member; Atlanta College of Physicians and Surgeons, Atlanta, 1913; aged 49; died suddenly from injuries received when his automobile collided with a truck on July 29, 1937. He was a prominent physician and limited his practice to obstetrics. Dr. Rogers was favorably known throughout Turner and adjacent counties. Surviving him are his widow and two married daughters.

Dr. Robert John McNeill, Tignall; member; University of Georgia School of Medicine, Augusta, 1902; aged 63; died after a long illness in the Washington (Georgia) Hospital, on August 17, 1937. He was a native of Abbeville, South Carolina, and had practiced medicine in Tignall and surrounding community for many years. Dr. McNeill was one of the State's best citizens. He was a member of the Wilkes County Medical Society, Woodmen of the World, Masonic Lodge and the Danburg Methodist church. Surviving him are his widow and one son. Funeral services were conducted by Rev. Lupo and Rev. Love Harrell.

Dr. Charles Amory Dexter, Columbus; member; Jefferson Medical College of Philadelphia, Pa., 1902;

aged 60; died at the Columbus City Hospital, Columbus, on August 20, 1937. He served as a member of the staff of the hospital, then for many years was in active charge of its administration. Dr. Dexter did an extensive practice. He was a native of Columbus and a member of the Muscogee County Medical Society, Third District Medical Society, Southern Medical Association, American Medical Association, Masonic Lodge, Shrine and the Trinity Episcopal church. Surviving him are his widow, four daughters, Mrs. Edith Rice, Manassas, Va.; Mrs. Mary Boyd, Philipsburg, Kan.; Mrs. Jean Lutz, Sharon Springs, Kan., and Miss Roberta A. Dexter, Columbus. Funeral services were conducted by Rev. J. D. C. Wilson, of LaGrange, from the Trinity Episcopal church. Interment was in Linwood cemetery.

BOOK REVIEWS

Textbook of Medicine by Emerson. This book is well arranged and splendidly written. The brief historical notes given of the various diseases and the discoverers create a keen interest for those just entering the study of medicine and renew pleasant memories in those who have been familiar with medical literature for some time. The author's style of writing is particularly pleasing. While he has sacrificed nothing of scientific truth, he has maintained throughout his book an element of literary value that carries the mind of the reader over page after page with easy effort and without fatigue.

The many references made to literature already published indicate that the author has left nothing undone in acquainting himself fully with all of the subjects upon which he has written.

The chapters on endocrinology and allergy including atopies carry perhaps the greatest amount of information not found in other text-books. This is probably due to the fact that these are relatively new subjects. More work is being done and more literature accumulating in these than in other fields. The subjects of heart diseases, organic and functional, have been most excellently portrayed and many intricate points in cardiac literature made clear. So, too, on diseases of the nervous system, the author has displayed a clarity of understanding rarely found of this difficult subject. The chapters on acute infectious diseases, including the inoculation against and treatment with vaccines, in such cases as these are applicable, are very good.

The publishers also have played a splendid part in preparing this work. They have used an excellent quality of light unglazed paper and good clear type. Heavy type has been used freely to emphasize important lines.

This book should unquestionably find lodgment among the many excellent works on the same subject that have maintained places as standard text-books and been recognized among those called classic.

A. G. DELOACH, M.D.

Memoranda of Toxicology, by Max Strumper, B.S., A.M., Ph.D. Third edition. Published by P. Blakiston's Son and Co., Inc., Philadelphia, Penn. 1937.

This book is of small size, measuring $6 \times 4\frac{1}{2}$ inches, which makes it useful for the student and practitioner who cares to carry it with him to the class room or to the bedside. It is bound with flexible washable cover and is not likely to be easily torn or destroyed from use. It contains 304 pages of printed matter which is strictly confined to toxicologic matters, beginning with general information concerning poisons, their definitions and actions. Considerable information is also written about treatment in poisoning by drugs and certain chemicals. Chapter 3 is of great importance to all physicians and students because of its information concerned with the practitioner and his duties in cases of poisoning. The book will be found not only interesting, but of great value to every physician and medical student.

JACK C. NORRIS, M.D.

Obstetric and Gynecologic Nursing, by Frederick H. Falls, M.D., Professor of Obstetrics and Gynecology, University of Illinois College of Medicine, etc., and Jane R. McLaughlin, R.N., Supervisor of Department of Obstetrics and Gynecology, Research and Educational Hospital, University of Illinois College of Medicine; 492 pages, 83 illustrations, C. V. Mosby Co., St. Louis, 1937. Price \$3.00.

The senior author, an outstanding authority in this specialty, presents in cooperation with an experienced instructor of nurses this valuable book on obstetrical and gynecologic nursing. For this purpose it is complete. It offers the fundamentals of anatomy, physiology and diseases related to pregnancy; the gynecologic disorders are covered in a systematic and concise manner. The essentials that any nurse should know regarding an obstetrical or gynecologic patient are stressed. General outlines are given of the common nursing procedures including care of the newborn. This book can be readily recommended for nurses.

JAS. N. BRAWNER, JR., M.D.

Disinfection and Sterilization, by Earnest C. McCulloch, M.A., D.V.M., Ph.D.; Lea and Febiger, Philadelphia.

This book contains 521 pages and 53 engravings, and is one of the most complete books of its type I have ever had the pleasure of reading. It is thoroughly up-to-date concerning its subject. Chapter 1 is largely historical and refers to many interesting points that have had a bearing on the gradual evolution of knowledge concerning disease and antisepsis. Chapters II and III consider natural agencies influencing microbial growth and the germicidal properties of the body. The succeeding chapters in turn cover every phase of bacterial control and elimination. New and extremely modern information is found in parts of the book which deal with ultraviolet ray and the modern germicides like mercurochrome and merthiolate; likewise the dyes are thoroughly discussed as to antibacterial properties. The book, aside from its voluminous but brief informative qualities, is pleasantly readable and confines itself closely to the subjects under discussion.

JACK C. NORRIS, M.D.

PROGRAM OF THE FIFTH DISTRICT MEDICAL SOCIETY

The Society will meet at the Academy of Medicine,
38 Prescott Street, N. E., Atlanta. October 7th, at
6:00 P. M.

6:00 P. M.

Buffet supper will be given in honor of members and
guests by the Woman's Auxiliary.

7:00 P. M. SCIENTIFIC PROGRAM

1. Address of Welcome
H. Cliff Sauls, M. D., Atlanta, president of the
Fulton County Medical Society.
2. Response to the Address of Welcome
Geo. A. Traylor, M. D., Augusta, president of
the Medical Association of Georgia.
3. Surgery in Syphilis of the Stomach
Geo. W. Fuller, M. D., Atlanta, associate pro-
fessor of clinical surgery, Emory University
School of Medicine.
4. The Surgical Treatment of Certain Types of Heart
Disease—Lantern Slides
Alfred Blalock, M. D., Nashville, Tenn., asso-
ciate professor of surgery, Vanderbilt University
School of Medicine.
5. Observations on Secondary Repair of Harelip—
Lantern Slides
Wm. G. Hamm, M. D., Atlanta, visiting plastic
surgeon to the Emory University, Georgia Bap-
tist and Piedmont Hospitals.
6. The Evolution of the Treatment of Tuberculosis—
Lantern Slides
Paul H. Ringer, M. D., Asheville, past-president
of the Medical Society of the State of North
Carolina.
7. Business
8. Election of officers

SURGICAL CONFERENCE TO BE HELD IN CANTON, SEPTEMBER 22

The Georgia Section of the Southeastern Surgical
Congress will hold its fourth annual clinical conference
at Canton on September 22nd on invitation by Dr.
Grady N. Coker, Canton, president-elect of the Medical
Association of Georgia. The meeting will open at
10:00 A. M., Central time, in the Woman's Club House.
Dr. T. C. Davison, Atlanta, will preside. Clinical
cases will be presided over by the invited speakers and
discussed from the floor. Members of the Medical Asso-
ciation of Georgia and physicians of adjacent states are
invited to attend.

Titles of papers on the program follow:

1. The Use of Beef Bone in the Open Treatment of
Fractures.
Dr. H. D. Birdsong, Athens.
Discussion to be led by
Dr. Lawson Thornton, Atlanta.
2. Inguinal Hernia.
Dr. Fred Rudder, Fort McPherson.

Discussion to be led by
Dr. Hal Miller, Atlanta.

3. Breast Tumors.
Dr. Enoch Callaway, LaGrange.
Discussion to be led by
Dr. Ben Hill Clifton, Atlanta.
 4. The Use of Sulfoanilamide in Infections of the
Urinary Tract.
Dr. Stephen T. Brown, Atlanta.
Discussion to be led by
Dr. M. A. Hubert, Athens.
 5. Medical Societies.
Dr. Geo. A. Traylor, Augusta, president,
Medical Association of Georgia.
 6. A Few Remarks.
Dr. B. T. Beasley, Atlanta, secretary.
Southeastern Surgical Congress.
1:00 to 2:00 P. M.
Lunch—Courtesy of Dr. Grady N. Coker.
 7. Sinusitis, Acute and Chronic.
Dr. B. Russell Burke, Atlanta.
Discussion to be led by
Dr. Arthur G. Fort, Atlanta.
 8. Acute Appendicitis.
Dr. C. E. Rushin, Atlanta.
Discussion to be led by
Dr. Shelley C. Davis, Atlanta.
 9. Carcinoma of the Descending Colon.
Dr. Geo. F. Eubanks, Atlanta.
Discussion to be led by
Dr. Hulett H. Askew, Atlanta.
 10. Diastasis of Abdominal Incision.
Dr. W. S. Dorrough, Atlanta.
Discussion to be led by
Dr. Geo. W. Fuller, Atlanta.
- There is no registration fee.

TO AMERICA'S SCHOOLS—YOUR HEALTH!

Once more, during the coming fall, winter and
spring, the Voices of Medicine will salute the people of
America, with the toast "YOUR HEALTH." This is
the well-known title of the radio program of the
American Medical Association and the National Broad-
casting Company. The coming season will be the
fifth; the first two years were devoted to health talks,
and the last two seasons to dramatized health messages.
This year, the salutation will be addressed particularly
to the teachers and students in the Junior and Senior
high schools, in the hope that the program will be
helpful in illustrating, amplifying, and enriching the
health teaching in those schools. The program will be
on the air while schools are in session, so that the pro-
gram may be utilized directly in the thousands of
schools which now have or soon will have radio and
public address systems reaching the class-rooms. Pro-
grams will be announced in advance in *HYGEIA*, The
Health Magazine. While the program is planned es-
pecially for high schools, it will not sacrifice the in-
terest which it has held for listeners in the home. To
teachers, students and stay-at-homes, the American

Medical Association and the National Broadcasting Company will address their message of health education with the familiar musical theme HALE AND HEARTY, written especially for the program, and the toast, "To America's Schools, YOUR HEALTH!"

MEDICO-MILITARY INACTIVE DUTY TRAINING

1. The ninth annual training course for Medical Department reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minnesota, October 3 to 16, 1937.

2. This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo Foundation to give training in military medicine to the young medical men connected with the foundation. Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend the clinical presentations during the morning hours. Such permission was granted and attendance has become so increasingly popular that it is now necessary to limit enrollment.

3. The program will follow the plan of past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoon and evening will be devoted to a medico-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

4. This training is on an inactive duty status and is without expense to the government. Enrollment is open to all Army and Navy reservists of the Medical Departments in good standing. Applications should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska, or to the Surgeon of the Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

5. The Surgeons General of the Army and Navy have signified that they will attend and it is believed that the Surgeon General of the Public Health Service will also appear on the program.

KENT NELSON, Colonel,
Medical Corps, Surgeon.

The International Assembly of the Inter-State Postgraduate Medical Association of North America, under the presidency of Dr. John F. Erdmann of New York, will be held in the beautiful new public auditorium of St. Louis, Missouri, October 18, 19, 20, 21 and 22, with pre-assembly clinics on Saturday, October 16 and post-assembly clinics, Saturday, October 23 in the hospitals of St. Louis.

The aim of the program committee, with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The St. Louis Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

A tentative list of the distinguished teachers and clinicians who will take part on the program may be found on page XV of the advertising section of this Journal.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies to be present. A registration fee of \$5.00 will admit each member to all the scientific and clinical sessions.

For further information, write Dr. W. B. Peck, Managing Director, Freeport, Illinois.

CLINICAL EXPERIENCES WITH NEWER ANALEPTICS

CHARLES L. BURSTEIN and E. A. ROVENSTINE
(Dept. of Anesthesia, Bellevue Hosp.)

Curr. Researches in Anes. & Analg., 16:151
(May-June) 1937

This study is concerned with the analeptics, metrazol, picrotoxin, and coramine, which act on the vasomotor and respiratory centers as to their effects in safeguarding patients against depression of sedative or hypnotic drugs used in anesthesia.

Metrazol was administered in doses of 1½ to 2 cc. intravenously and repeated in 5 minutes if necessary. With intramuscular injection the dose was the same; the reaction similar but less rapid. Coramine was given in doses of 5 cc. repeated at 5- to 10-minute intervals until 25 cc. were used. The observations on picrotoxin have not permitted an accurate standardization of the dosage. It was given in 3 mgm. doses except in cases of intoxication from the barbiturates. However, it appears from these cases that 6 mgm. doses may wisely be used.

In morphine poisoning, ether or paraldehyde depression, cyclopropane anesthesia, metrazol was clinically most effective. Respiratory activity usually became more normal. The pulse and blood pressure were often improved and a more rapid return to consciousness was usually promoted. The action of metrazol in tribromethanol depression was not as prolonged as that from coramine, and picrotoxin was the least serviceable.

The most interesting observations were made in connection with the use of these analeptics in depression or intoxication from various barbiturates. Although not in keeping with experimental evidence, the response following metrazol was more satisfactory than from picrotoxin. First, the respiratory rate and volume exchange were improved and succeeding doses frequently awakened the patient. Coramine also stimulated the patient in some instances but with less effect than with metrazol and picrotoxin. In two instances coramine appeared to increase the duration of narcosis and retarded recovery. Convulsions occurred in one patient following picrotoxin. This patient had received evipal previously and 45 minutes later 3 mgm. of picrotoxin were given intramuscularly. Generalized tremors developed in 3 minutes, lasting about 15 minutes. A satisfactory technique is to give 1 mgm. of picrotoxin per minute until

an effect is secured. Picrotoxin may be added to an infusion of 5 per cent glucose, given with endotracheal intubation.

While the value of analeptics in hypnotic drug poisoning has not been completely established, a clinical improvement follows their use. In general, metrazol is the most satisfactory of the analeptics studied.

R *Optician*

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., October, 1937

Number 10

HEART DISEASE AND HEART FAILURE*

The Modern Problem of Late Middle Life

J. H. J. UPHAM, M.D.†
Columbus, Ohio

This subject should appeal to the medical profession very greatly as individuals as well as practitioners, for it has been shown to be the greatest assigned cause of death among physicians for the past five years and few physicians fail to come in frequent contact with victims of this morbid state, no matter what branch or specialty engages their attention. Nor is the subject one for complacent meditation, for the death rate from this cause has been steadily mounting until it is now undoubtedly the most frequently assigned cause of death.

Much has been brought out in recent years in the way of better knowledge of the etiology, pathology, physical signs and symptoms of heart diseases; instruments of precision have been developed to show more their exact character, degree and progress; therapeutic measures have been produced which aid greatly in treatment, but despite these efforts the death rate has nearly doubled in the last twenty years and with the accompanying increase in morbidity which may be assumed, the economic and social loss is appalling.

The case is very different from the many instances of infectious diseases which have been so successfully combatted in recent years. In these the recognition of specific organisms, their manner of transmission and the mode of entrance led readily to ways of prevention which have so materially reduced

the mortality and morbidity from these sources.

In heart diseases some are the result of infection but many are not; of the infectious types there are different organisms suspected but none definitely established. In the non-infectious types the etiology is extremely complex; there may be familial influences, social and economic factors, habits of life, and diseases of other organs upon which the heart is closely dependent in performing its functions, especially the blood vessels, kidneys and lungs. To make matters worse the general conception of the pathologic changes of some forms of heart disease has been inexact and confused and the nomenclature used in vital statistics is in some instances misleading and incorrect. For example, we see in the vital statistics of a State Health Department (Ohio) the classifications: Acute Endocarditis, Pericarditis, Myocarditis, Angina Pectoris and "Other Diseases of the Heart." In a discussion of the etiology of organic heart disease by Wyckoff and Lingg of the Social Service Cardiac Clinic of Bellevue Hospital, a chart classification is: Rheumatic, Unknown, Syphilitic, Arteriosclerotic and Others. Even the International List of Causes of Death contributes to the confusion, and as a result our statistics are very uncertain and inaccurate and will continue to be so until some better system of classification be agreed upon and universally adopted.

To meet the problem in actual practice it would seem expedient for the time being to have in mind some such simple classification as Wyckoff and Lingg, which groups the various heart deaths according to the etiology so far as known and according to their frequency in the different age periods. In the first two decades of life, for example, this classification places all heart conditions according to etiology in three groups: *congenital*, *unknown* and *rheumatic*. The first is self-explanatory. The number of instances

Etiology in Organic Heart Disease Wyckoff-Lingg-Social Service. Cardiac Clinics for Adults, Bellevue Hospital, New York.

*Address before the Medical Association of Georgia, Macon, May 12, 1937.

†President-Elect of the American Medical Association, Dean and Professor of Medicine of the Ohio State University College of Medicine, Columbus, Ohio. Invited guest.

is relatively small, the cases are readily recognizable and do not play a significant part in the general heart problem. The second is a slightly larger group in which heart symptoms and heart deaths occur without at present any discoverable cause. Among these, perhaps, may be placed the simple "idiopathic hypertrophy" of childhood for which the lack of vitamin B in the finding has been suggested as a cause. Also in this group are toxic hearts from one cause or another, and sudden deaths assumed to be from heart failure without definite evidence, some of which may not be from heart disease at all.

The predominant cause of heart conditions and heart deaths in these two decades is the rheumatic heart. This is graphically shown in the accompanying chart of Wyckoff and Lingg and well supported by statistics. In the cases of this group we are familiar with the valve and the muscle changes, the resulting cardiac hypertrophy, dilatation and failure, but we do not know whether the cardiac invasion is altogether an infection, and if so, what is the existing organism or its mode of entrance.

Nor do we know whether rheumatism and other infectious diseases of early life, while not apparently affecting the heart at the time may not insidiously damage the heart muscle and this factor may explain some of the cases of rather acute development of cardiac symptoms in middle life after excessive muscular effort, often designated as heart strain or even acute dilatation. The recognition of the frequent association of tonsillitis with attacks of rheumatism led to the assumption that the tonsils were the portal of entrance of the infection; their removal has become popular and common practice for the hoped for prevention of rheumatism and the ever possible heart involvement.

It cannot, however, be said that the results in this regard have been encouraging. Several investigators have made analyses of large series of tonsillectomies and compared the results with the incidence of rheumatic fever and heart disease in corresponding groups unoperated upon. They draw attention to the important fact that in considering the results of operation one must check carefully the age of the patient because the greatest incidence of acute rheumatism is before 10 years of age, and that the reported

lessened recurrences in children operated upon at that age or later is quite paralleled by the control cases of the same ages unoperated upon. In a small per cent there were no manifestations of rheumatism after the operation but, on the other hand, rheumatism appeared for the first time in twice as many of those cases that had had the operation. Their final conclusion seems to be that the age at which the tonsillectomy was performed and not the fact of tonsillectomy appeared to be the significant factor in the incidence of non-recurrence of rheumatism after operation.

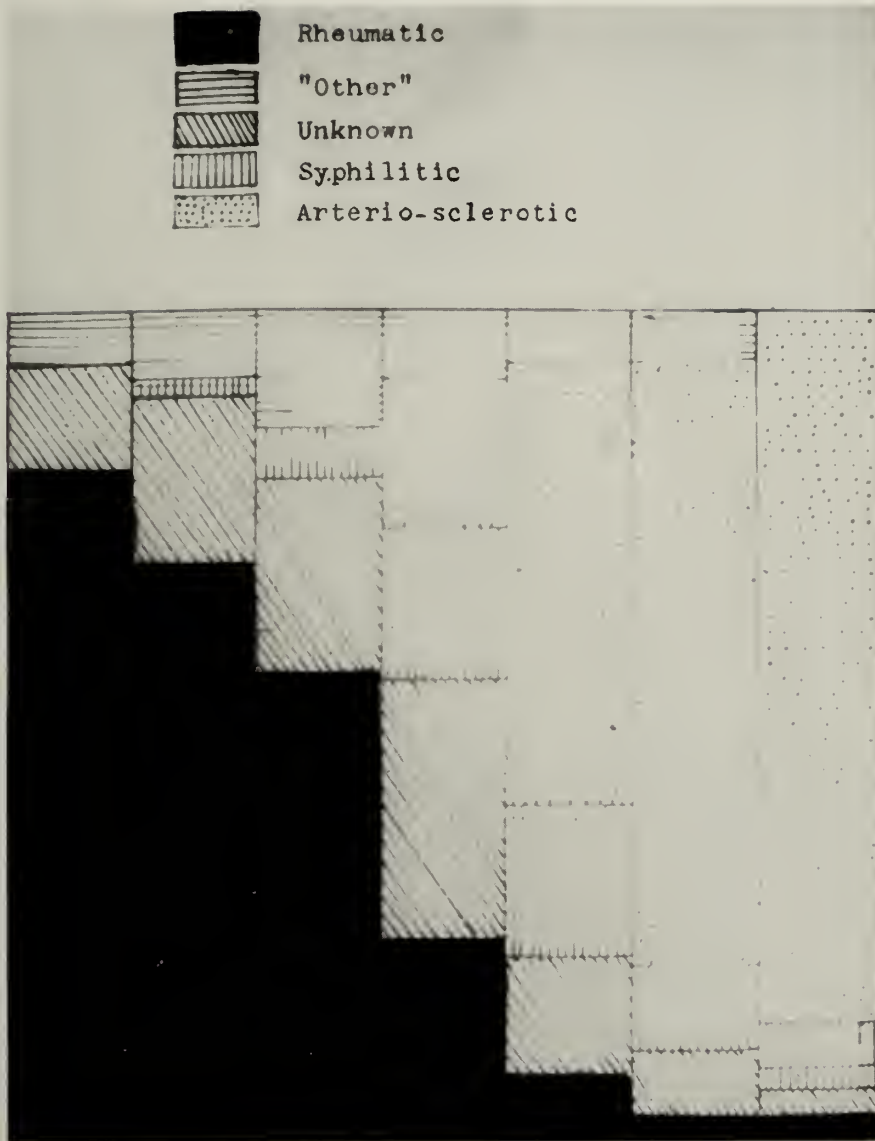
I do not by any means deny that the tonsils may not be important portals of entry of infection, but there are so many other areas of lymphoid tissue in the naso-pharynx which may be points of entrance that clinicians and surgeons should be on their guard against promising too much from the operation, or from removing normal tonsils as a prophylactic measure against rheumatism until better grounds for its efficacy are established.

Late in the third decade of life syphilis appears as a factor in heart deaths. It increases in the fourth decade and then decreases. Never a predominant factor, usually rated at from 10 to 14 per cent, it is usually easily recognizable from the history, physical signs and is definitely established by serologic tests. The greatest hope of eliminating this factor lies in the vigorous antisyphilitic campaign at present being carried on over the country. Prevention means everything, for after the changes induced by the invasion of the spirochete into the valves or blood vessels take place intensive antisyphilitic treatment is undesirable if not actually contraindicated as far as the heart condition is concerned.

Heart deaths up until early middle life may be accounted for in the great majority by causes falling into one or another of the above mentioned groups. Beginning in this period, however, another factor enters the picture and increases in each decade, soon becomes the predominant cause of heart failure and heart deaths. This is arteriosclerosis and it today is one of the great problems of modern life. That it is increasing in this country seems only too evident.

Gethner eight years ago summarized the situation as follows:

1. The mortality rate from cardiovascular disease in the United States leads all the other



countries, not excluding even as highly an industrial country as England.

2. The death rate from this cause is definitely and steadily increasing in the United States, while it is decreasing in all other countries except England, where it shows an almost negligible increase.

3. The death rate per 100,000 in the past 15 years has shown an increase in the whole United States of 38, in Chicago of 57.2 and among physicians 336.

4. Physicians who are subjected to double strain, mental and physical, such as driving their automobiles, climbing stairs, exposure to all kinds of weather, fatigue due to long hours of work, loss of sleep, contribute the

highest mortality; six times that of Chicago and nine times that of the United States as a whole.

We are all familiar with the clinical picture of this so-called modern disease, but the actual pathologic changes and their relation to heart failure are often confused in the minds of many practitioners. Boyd's classification is very helpful to a better understanding of the subject. He divides arterio-sclerosis into three groups:

First, Arteriosclerosis or atheroma. This is a degenerative change in the intima, most common in the aorta but occurring also in the smaller vessels. It bears no relation to hypertension, and only as it occasionally invades

thrombosis does it play a part in cardiac the coronary vessels predisposing to coronary morbidity and mortality.

Second, Monckeberg's sclerosis. This is the commonly noted hardening of the arteries, so frequently seen in the pipe-stem radials and tortuous temporals of elderly people. It is a degenerative change in the media; the lumen of the vessels is not encroached upon, and it bears no relation to or is accompanied by hypertension. Occasionally, however, it is not evenly distributed, but occurs in patchy areas. When this happens in the coronary vessels and the individual is subjected to some more than ordinary physical effort, such a vessel may give way. Such conditions may explain the sudden deaths on the golf links or other activities in individuals without high blood pressure or other suggestive evidences of any heart disease.

Third, Diffuse hyperplastic sclerosis. This is the form that is definitely associated with vascular hypertension, cardiac hypertrophy and eventual heart failure. It would appear to begin in the arterioles as a hyaline degeneration of the intima which diminishes the size of the lumen of the vessels. The degree of involvement determines the severity of the process and the life expectancy of the patient. In malignant hypertension the involvement is widespread and the encroachment upon the lumen of the vessels is very marked. Kernohan, Anderson and Keith state that the normal ratio of these vessel walls to lumen is 1:2, whereas in malignant hypertension it may be 1 to 1.1.

The effect of this process is to cause an enormous back pressure on the heart and the latter hypertrophies to maintain the circulation. In malignant hypertension the duration is relatively short, usually a few years, with insufficient time to allow for much involvement of the larger vessels. The earlier this condition arises the worse the prognosis, and it is merely a question which will give out first, the heart or the kidneys. With a high diastolic pressure reading and a relatively low nonprotein nitrogen retention, the outlook for heart failure is the rule, with a high nonprotein nitrogen indicates the probability of uremia.

In benign hypertension, Kernohan, Anderson and Keith found the average ratio of vessel wall to lumen was 1 to 1.4. This indi-

cates a lesser degree of obstruction and the process is essentially chronic, lasting often 15 years or more. Cardiac hypertrophy occurs and the development of cardiac symptoms with eventual heart failure is merely a matter of time.

This last named type, diffuse hyperplastic sclerosis, is therefore open to the strong suspicion of being the pathologic basis of a large part of the increase in heart disease in recent years associated with high blood pressure, and the problem would seem to be the discovery of the etiologic factor or at least for the present, the early recognition of the beginning process in the hope of staying its progress. If we wait until the appearance of cardiac symptoms, the condition is incurable and the only hope for the patient is to endeavor to prolong life as long as possible.

The early recognition of diffuse hyperplastic sclerosis is not difficult because it manifests itself clinically by the increase in the blood pressure and the benign or malignant character may be quickly established by biopsy and microscopic examination of a small section from the pectoral muscle.

In any case of hypertension, a high diastolic blood pressure is of bad prognosis and indicates almost certain cardiac failure as the ultimate outcome. This is not difficult to understand when one stops to consider that in such cases the left ventricle must contract to the pressure of the diastolic reading before the aortic valve will open. This indicates the extra load thrown on the heart and the inevitable failure that must eventually occur.

In blood pressure readings in hypertension the diastolic pressure is often the more important, especially in prognosis; the systolic pressure is mostly an indication of the strength of the heart muscle, and as such, one should recognize that its fall, when not occurring as a result of rest and other therapeutic measures, is an indication of a weakening heart muscle and often an impending heart failure.

The connection between hypertension and heart failure is simply one of starvation and overwork. The increased demands for maintaining the circulation are met by hypertrophy of the heart which may carry on satisfactorily for several years, but eventually dilatation and decompensation occur. Why does this take place? Ordinarily the larger a

muscle the greater we expect to be its power and capacity for work. We often see enormous, powerful looking hearts, yet they have failed and the pathologists report nothing but hypertrophy and dilatation. The observations of Wearn of Cleveland would seem to explain the problem. The normal heart is richly supplied with blood vessels and the capillary system is particularly abundant in the ventricles, there being a capillary vessel for nearly every muscle fibre.

In hypertrophy the muscle tissue is enormously increased without a corresponding multiplication of vessels; this condition may be maintained for a time but eventually circulatory and nutritional failures are inevitable, and the end picture of a great number of patients with hypertensive vascular disease.

In this type of sclerosis, as in the preceding, there may be a disproportionate localization of the thickening in the coronary vessels. This predisposes to thrombosis or to an earlier heart failure than one would expect from the blood pressure readings and the amount of cardiac hypertrophy. This may readily be appreciated by the study of sections from hypertrophied hearts with sclerotic coronary vessels.

Summary

1. When confronted with a patient with heart disease one should have in mind the probable pathologic changes according to the age period.

2. Syphilis plays an important but minor part in causing heart deaths, and is a problem to be met by prevention rather than treatment.

3. The predominant cause of heart deaths in middle and past middle life and the one that seems definitely to be on the increase is arteriosclerosis. This may act in three ways: first, by hypertensive heart failure; second, by coronary thrombosis and, third, by coronary rupture.

4. Individuals of middle and past middle life, especially those apparently in excellent health but with even a moderate increase in blood pressure, or those who may have noticed after exertion even slight pains over the heart area, should be advised to beware of indulging in exercise out of proportion to their ordinary habits.

PROTAMINE ZINC INSULIN IN THE TREATMENT OF DIABETES MELLITUS*

WILLIAM R. MINNICH, M.D.

JAMES E. PAULLIN, M.D.

Atlanta

Diabetes mellitus, being a chronic disease and one in which a cure is rarely achieved, is treated by two well recognized and established methods. The first, and of greatest importance, is strict dietary regulation; the other method used in conjunction with dietary regulation is hormone replacement or giving insulin which is the substance ordinarily supplied by the islands of Langerhans.

With the discovery of insulin by Banting and Best in 1922, it was soon realized that following its employment two undesirable reactions occurred—one entirely local at the site of injection, the other a systemic disturbance caused by an abnormal lowering of the blood sugar. The first objection was soon eliminated by purification of the product, but the production of hypoglycemic shock continues to occur, bringing with it great distress to the patient, his family, and anxiety to the physician.

It was also soon observed that in a patient with severe diabetes, even with the administration of large doses of insulin, it was almost an impossibility to keep the urine sugar free and to keep the blood sugar within a normal range without producing hypoglycemic shock. Because of these difficulties many investigators attempted to control the situation by giving in severe cases smaller doses of insulin at more frequent intervals, so that occasionally to keep a patient sugar free it was found necessary to give as many as 4 doses of insulin daily. These were spaced at intervals corresponding to the time of day when the greatest carbohydrate load had to be handled. This was the difficulty which confronted many workers, referred to by Krarup,¹ which caused them to begin trying even as early as 1923 to find some material with which insulin might be combined that would decrease the rapidity of its absorption and make its action simulate the normal supply of insulin usually furnished by the pan-

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

creas. Since then investigation has constantly been undertaken in various laboratories but no satisfactory method was developed until 1935 when Hagedorn² and his associates found that by uniting insulin with a protamine and keeping this at a constant pH, almost iso-electric with the body fluids, the activity of insulin could be greatly prolonged.

Regular insulin is rapid in its action; the effect of a dose administered subcutaneously reaches its maximum effect in 3 or 4 hours and has practically disappeared in from 6 to 8 hours. It was soon found that protamine insulin, due to its slow absorption, exerted its effect over a period of from 16 to 18 hours and there are instances on record which seem to indicate that this activity might be further prolonged and have a cumulative effect. In June, 1936, we began the use of protamine insulin to which a small amount of zinc had been added. It was found that the addition of zinc greatly prolonged the activity of the insulinate. The product now available for general use contains zinc combined with protamine insulin, which is the preparation we wish to discuss.

It can be seen at once that the advantages of this new insulin, both regarding its action, which approximates the normally functioning pancreas, and the reduction of repeated injections, furnish a source of delight to the patient.

With the use of regular insulin, a severe diabetic under the proper dietary control and insulin regulation quite frequently begins the day with a fasting blood sugar considerably above normal and also with sugar in the urine. With such a condition as this existing, it is inferred that there is a depletion of the normal glycogen reservoirs of the body and a tendency to the development of sub-clinical acidosis. If this occurs day in and day out, it is reasonable to assume that sooner or later the body must of necessity suffer. With the use of the new insulin it is now possible, in the majority of cases, to keep the blood sugar during the 24 hours at a more normal level, thus avoiding the peak-like fluctuations which existed with regular insulin. For the past 18 months it has been possible, through the kindness of Messrs. Eli Lilly and Company who furnished us free of charge an unlimited supply of protamine insulin and its

various compounds, to undertake clinical investigation on a series of about 40 patients.

In the early days Hagedorn³ and his associates and Krarup¹ advocated the injection of protamine insulin at night and regular insulin in the morning. Root⁴ and his associates tried this method and obtained satisfactory results. Campbell⁵ and his associates were able to obtain satisfactory control in a number of their patients with a single injection of protamine. Such was the experience of Sprague⁶ and others in the majority of their cases. In our series we have used both methods and have obtained good results in a great majority of instances. To obtain satisfactory results one must be guided by certain dietary regulations. It is our custom to give the protamine zinc insulinate about $\frac{1}{2}$ hour before the morning meal and to divide the carbohydrate allowance for the 24 hours into an intake for the three meals in which 20 per cent will be taken for breakfast, 40 per cent will be taken at noon, and 40 per cent at night. With such an arrangement it will be seen that the major portion of the carbohydrate load will be given after the protamine insulin has had a period of 5 or 6 hours of activity, as it is at this time that it is beginning to exert its greatest effect. On occasions, with individuals who have a low tolerance for carbohydrate, it is necessary to use a supplementary dose of regular insulin with the protamine zinc insulin. When two doses are required the regular insulin is given $\frac{1}{2}$ hour later than the protamine and the injection is made at a different site with a clean syringe.

Generally speaking, after regulation and control, with a morning dose of protamine insulin and in those who require a supplementary dose of regular insulin, it will soon be found that as the patient remains sugar free, the supplementary dose of regular insulin can be rapidly decreased and very frequently omitted. With such a procedure it is possible to approximate the normal blood sugar level and the urine will remain sugar-free during the entire 24-hour period. In newly discovered cases of diabetes we have recently been starting them on protamine insulin alone, but with some individuals it has been necessary to supplement the first few doses of protamine with regular insulin until

they approach a non-diabetic status, at which time the regular insulin is omitted. Joslin⁷ and his associates have reported results with new patients who have been started at once on protamine insulin.

There are many advantages to a diabetic in using the new insulin: First, it decreases the number of injections which are necessary during the 24-hour period to control the disease. Secondly, it increases the control of the disease; and thirdly, it should popularize the use of insulin because it increases the interest of the average diabetic in remaining sugar-free. It also possesses some disadvantages, the chief one of which is the production of insulin reactions, which will occur even in well-controlled patients. These insulin reactions differ in many particulars from the hypoglycemic states which have been previously observed in patients who take regular insulin. The hypoglycemia resulting from protamine insulin is very slow and insidious in its onset and very frequently cannot be recognized by the patient. The reactions may be quite severe, producing mental aberration, convulsive seizures and unconsciousness before anyone is aware of just what has occurred to the patient. The reactions are not as easily relieved by the administration of carbohydrate as those which occur with regular insulin. Ordinarily a patient in hypoglycemic shock can be rescued with 10 grams of glucose given intravenously or by taking orange juice by mouth. This is not true with the majority of patients who suffer shock from protamine insulin. Relief does not come so quickly and, furthermore, there is a tendency for the patient to lapse into another hypoglycemic shock in from $\frac{1}{2}$ -hour to one hour after the original shock has been relieved. For this reason it behooves the patient and physician to become thoroughly familiar with the onset of these symptoms and to be prepared to take immediately the necessary measures to obviate such a situation. We advise all of our diabetics, whether they are taking protamine or regular insulin, to constantly carry in their pockets or purses two lumps of sugar. In the event they experience any unusual sensation associated with hypoglycemia, they are requested to take the sugar immediately, and to report for further advice.

With all of its advantages protamine in-

sulin cannot be regarded as a panacea for diabetes, and cannot be administered without a considerable amount of care. If it is used intelligently it is less apt to produce severe and terrifying reactions. From our experience we are convinced that with an educated diabetic patient it is possible to reduce these reactions to a minimum and to keep the patient in a non-diabetic status. Before dismissing consideration of hypoglycemic reactions resulting from protamine insulin, it is well enough to warn patients who have been rescued from such a state by the immediate administration of carbohydrate that it is well to take after this one or two crackers or a glass of milk. This will prevent a further recurrence of the hypoglycemia 1 or 2 hours later.

The diets of our patients have been quite liberal as to the amount of carbohydrate which they have contained. Most of them take from 140 to 200 grams of carbohydrate in 24 hours with approximately 1 gram of protein per kilo of body weight and fat sufficient to raise the caloric intake to meet the metabolic requirements. In obese diabetic patients we have found it useful to restrict the carbohydrate intake as well as the protein and fat intake until a sufficient amount of weight loss has occurred.

In establishing the required dose of protamine insulin which will be necessary for the diabetic it is necessary to know of his status each 24-hour period until he is regulated. Frequent blood sugar determinations will give the most exact knowledge of this condition but since these are inconvenient and costly to the individual, we have adopted the following method: each patient is provided with test tubes, an alcohol lamp, and Benedict's solution and is taught to test each specimen of urine voided during the 24-hour period and to record the color reaction; whether it be blue, green, yellow, brown or red. From the color reaction we know roughly whether that particular specimen is sugar-free, contains only a trace of sugar, or contains as much as 1, 2, or 3 per cent. The remainder of the urine is saved as a 24-hour specimen in which the total grams of glucose are determined. We know from these tests, at what time during the 24 hours the patient is spilling sugar and the amount he is excreting daily. With this information at hand it is

obvious that more complete control can be obtained. As a rule we have run a daily blood sugar curve on each patient before and after regulation with protamine insulin. On some of these patients who were changed from regular insulin to protamine without hospitalization, blood sugar determinations were not done until a later date but urinary determinations were made each day by the patients.

In the treatment of diabetic acidosis of moderate degree or in those patients with coma, the old or more rapidly acting insulin holds preference over the new protamine compound although Sprague⁶ and others have used the protamine zinc insulinate in conjunction with the regular insulin in treating this complication. From every point of view, it is well to remember that for *quick* action use the *regular insulin*, for *slow and prolonged* action use *protamine zinc insulinate*.

Illustrating what can be accomplished with protamine zinc insulin we wish to briefly summarize the records of a few patients.

REPORT OF CASES

Case 1. Miss F., aged 46, with a history of diabetes of approximately 2 months duration. She was markedly obese and had an infected pilonidal cyst, which was the cause of her consultation. When first seen her blood sugar was 656 mg. per cent. She was desugared on a diet of C-100, P-50, F-20, requiring regular insulin of 24-20-20. After standardization she was given zinc protamine insulinate 40 units at 7 A. M. and regular insulin 10 units at 7:30 A. M. with a diet of C-118, P-52, F-23. The slide shows the blood sugar curve on this regime. It is observed that some of the blood sugar readings are very low but even so, there were no reactions. She is now taking zinc protamine insulinate 30 units once a day and a recent blood sugar curve showed a normal level throughout a 12 hour period.

Case 2. S. T., aged 21. This patient was adjusted in the office. She was first seen Mar., 1936, with the usual symptoms of diabetes which had been present for 5 months. Physical examination was negative except for slight undernutrition. Her original diet was C-87, P-62, F-107. She was given insulin 10-0-10. She soon became sugar free and in a month her diet was increased to C-100, P-62, F-107, with an insulin dosage of 18-0-12. In June 1936 her diet was increased to C-140, P-71, F-85. She was given regular insulin 10 units at 7:30 A. M., and protamine insulin 20 units at 5 P. M. On this she showed some afternoon sugar. In July she was given two doses of protamine insulin, 15 units at 7 A. M. and 15 units at 7 P. M. On this routine she had sugar in the urine and a fairly high blood sugar curve during the day. In Sept., 1936, she was given 25 units of protamine insulin at 10 P. M. On this regime she was sugar free but the blood sugar was high. Because of her gain in weight and the fact that she did not adhere

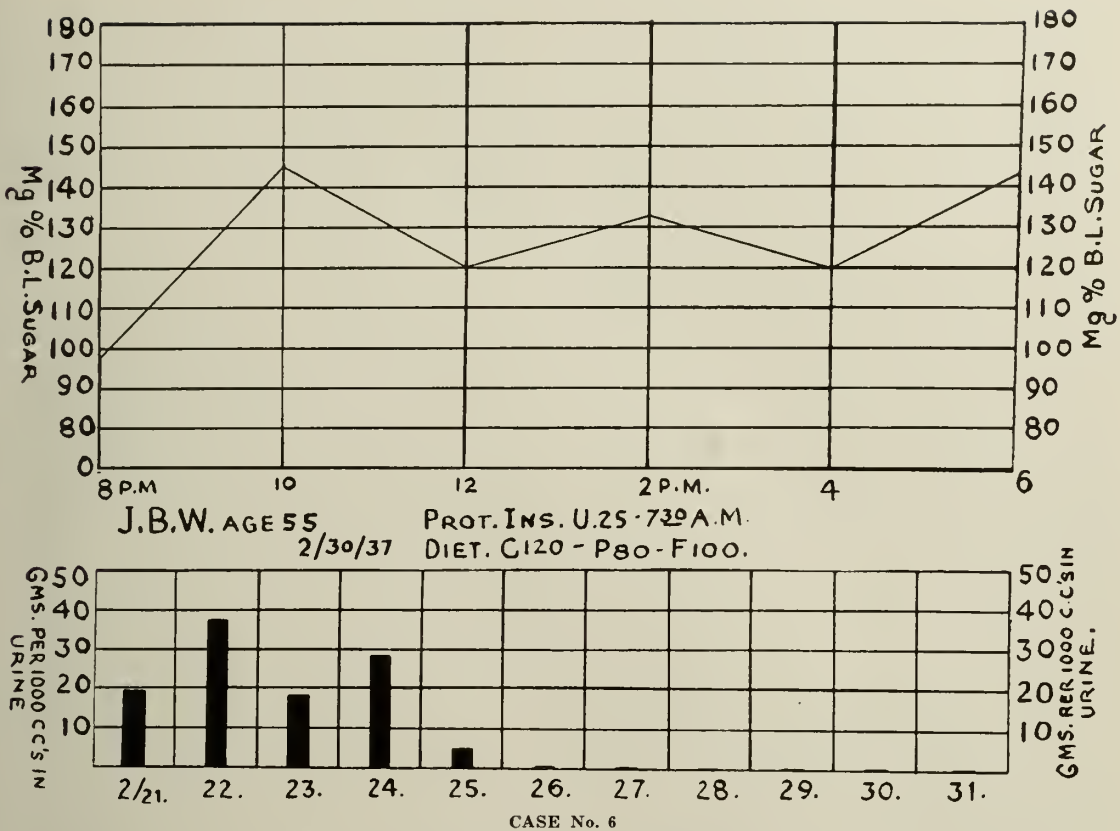
strictly to her diet, she was put on a diet of C-100, P-51, F-30, with 35 units of protamine insulin at 7 A. M. The next slide shows her blood sugar curve on this regime.

Case 3. Mrs. R., aged 54. Diabetes discovered on routine urinalysis while in the hospital in Oct., 1936. Her history suggested the existence of this disease for 3 months. She had a cystocele and a rectocele for which she was operated on and which was the primary cause of her hospital visit. She was over weight. On a diet of C-120, P-70, F-60 and 20 units of protamine insulin at 7 A. M., she was sugar free. Her diet since has been increased to C-150, P-80, F-72, with protamine insulin 25 units at 7:30 A. M. The following slide shows a daily blood sugar curve on this regime.

Case 4. H. N., aged 15. This patient has been a known diabetic for 5 years and 5 months, and has been under constant observation. He has grown and developed as any other boy of his age. The chief difficulty with him was the frequency of severe and unpredictable insulin reactions. In July 1936, he was sent to the hospital to be put on protamine insulin. Being a rather severe type of patient, he was given a diet of C-150, P-90, F-110 with regular insulin 30 units at 8 A. M., and 20 units at 5 P. M. The blood sugar curve on this regime showed wide fluctuations and he had insulin reactions. He was then put on protamine insulin with regular insulin, the dosage being manipulated according to the urinary sugar findings—his diet remaining constant. He left the hospital with instructions to take 20 units of regular insulin at 7:30 A. M., and protamine insulin 34 units at 4 P. M. The following slide shows his curve during the day on this regime. Since July we have changed his insulin dosage so that now he takes 30 units of protamine insulin at 9 A. M. and 6 units of regular insulin at 7:30 A. M. On this regime he is sugar free and has no insulin reactions.

Case 5. N. T. R., aged 16. He is one of twins; his brother does not have diabetes. This patient has been under observation for 13 years, or since the age of 3. He is easily controlled with 3 doses of regular insulin daily but constantly breaks his diet. In spite of the duration of his diabetes he is of normal height and weight and is able to do anything that the average boy of his age can do. It was hoped that by putting him in the hospital in Aug., 1936, he could be regulated with protamine insulin. He was put on a diet of C-136, P-83, F-120 with regular insulin of 30-0-15; on this he was not sugar free. After 3 days he was put on protamine insulin 30 units at 7 A. M. and 40 units at 5 P. M. On this regime he did well. Since his return home he has been taking 40 units of protamine insulin at 7 A. M., and 10 units of regular insulin at 7:30 A. M. On this, if he remains on his diet, he is sugar free. The slide shows his blood sugar curve on this regime.

Case 6. J. B. W., aged 55. Known to have diabetes for 10 years during which time he has not followed any diabetic schedule, neither has he taken insulin, and fortunately he has never been in coma. He was admitted to the hospital in Mar., 1937, because of a large carbuncle over his sternum. Except for this



Illustrates the rather flat sugar curve with no peaks, also may be seen the urinary sugar content and its diminution as the patient became standardized.

trouble his physical examination was essentially normal. He had a fasting blood sugar of 238 mg. per cent. He was put on a diet of C-100, P-70, F-100 with protamine insulin of 20 units at 7:30 A. M. As this dosage was not quite sufficient to keep his urine sugar free, it was increased to 25 units and in 3 days on this his blood sugar curve is shown. Ten days later he was discharged from the hospital on C-150, P-80, F-100 with 25 units of protamine insulin at 7:30 A. M. He is feeling fine, gaining in weight, and remaining sugar free.

Conclusions

From many similar experiences we feel justified in saying:

1. Protamine zinc insulin is a definite contribution to the advancement of the treatment of diabetes mellitus.

2. With the use of protamine zinc insulin it is now more nearly possible to satisfactorily control diabetics with one injection each day than it has been heretofore.

3. The required dose of protamine zinc insulin is, as a rule, smaller than that of regular insulin.

4. The frequency of insulin reactions can be decreased and almost prevented provided the patient and the physician will work hand-in-hand for such a purpose.

5. Insulin reactions occurring after the use of protamine zinc insulinate are insidious in their onset, may be quite severe, and are sometimes difficult to recognize, even by the patient. These can be obviated if proper attention is directed to the gradual decrease in the dosage of insulin as the patient remains sugar-free.

6. More liberal diets can be given with less glycosuria than was possible without protamine insulin.

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DISCUSSION ON PAPER BY DOCTORS MINNICH AND PAULLIN

Dr. V. P. Sydenstricker (Augusta): I think the excellent paper of Dr. Paullin and Dr. Minnich sum-

marizes the present state of knowledge of protamine zinc insulin. Its use like that of regular insulin is fraught at times with certain difficulties though there can be no doubt that it presents a tremendous advance in the control of the moderately severe diabetic.

Our work has been with an entirely different type of patients from those treated by the essayists so that our experience may have been somewhat at variance. We have used it exclusively with severe juvenile diabetics between the ages of twelve and eighteen. These children have miserable homes and parents who are unintelligent and in some instances uncooperative, all have been practically wards of the hospital for years and some board there all the time.

At the start, like everyone who has used this preparation, we had some amazing reactions, we failed to appreciate the cumulative possibilities of protamine insulin. Some of the periods of hypoglycemic shock persisted for eight hours in spite of repeated intravenous doses of glucose. Unusual exercise seemed to be a factor of importance in several instances. It was soon evident, however, that proper distribution of the diet and control of violent exertion would eliminate severe reactions.

Too rapid shift from old insulin, particularly in patients requiring large doses is apt to be disconcerting but is something which can always be avoided. Omission of a meal or even a part of a meal must be guarded against. The most satisfactory distribution of the diet seems to be two fifths at breakfast and at dinner and one fifth at supper. The saving out of 15 or 20 grams of carbohydrate from the regular meals and giving it in 5 gram amounts half way between meals and at bedtime is useful in preventing undue lowering of the blood sugar. We have had less difficulty in keeping patients sugar free than in preventing wide fluctuations of blood sugar. In most instances severe hypoglycemia seemed attributable to strenuous exercise.

Certainly for the intelligent patient who is cooperative protamine zinc insulin offers the maximum of conveniences and safety in the control of diabetes and even in juvenile patients who are largely on their own resources, planning their own meals and administering their own insulin we have had excellent results.

Dr. W. Edward Storey (Columbus): Dr. Minnich and Dr. Paullin have presented us with a very practical and very timely subject. Although protamine zinc insulin has been available for clinical tests for about a year, its use has been largely confined to institutions sponsoring investigation and to individual physicians sufficiently interested in the subject of diabetes to conduct investigations within their own practices. I might say that, on the whole, these were in the minority until just a month or so ago since which time protamine zinc insulin has been on the market, and the general public is now beginning to hear something about it. It is therefore my opinion that this paper is very timely.

The point which I wish to emphasize in my discussion is only one among several which the authors have brought out, but the one which I feel is of paramount importance, namely, better control of the diabetic patient's carbohydrate metabolism from day to

day. Before the advent of insulin, dietary restriction was the principal weapon in combating this disease. Since then and until the appearance of protamine zinc insulin a powerful means of controlling the disease was placed in the hands of physicians, and while the dramatic episodes in the disease such as coma were far more effectively dealt with than heretofore, unfortunately there was still left much to be desired. The studies of Joslin and his associates and others have shown clearly that while the percentage of deaths from acidosis and coma have been greatly reduced since 1922, the general morbidity among diabetics, taken in cross-section, has not been as greatly reduced as might have been expected on the basis of pure reasoning. This has been attributed to the complications resulting from premature arteriosclerosis. Recent investigation has indicated that among other things cholesterol metabolism, a process which, it appears is intimately bound up with vascular sclerosis, is also distorted, and this distortion is believed, among other things, to be caused by or certainly to be facilitated by the acidosis which even the best managed diabetic suffers from in greater or lesser degree a good part of the time. Therefore, anything which eliminates acidosis or maintains it at a relatively lower grade should prevent or postpone the development of premature arteriosclerosis, and the numerous complications accompanying it.

It is my opinion, in agreement with the authors, that if protamine zinc insulin justifies its existence it is chiefly by virtue of the fact that it better controls fluctuations in the carbohydrate metabolism, and this in turn lessens acidosis through a better regulation of fat metabolism including that of cholesterol. The studies of Wilder and his associates as well as others have shown that the effect of old insulin, good though it be, is not ideal because it is so difficult to maintain the blood sugar level with consistency within relatively normal limits. In other words, the excursions between the peak effects and the levels in the interim are, in many cases, too wide to justify the opinion that the patient maintains a normal level for more than about half the time. For the other half we must suppose that the patient is in a state of greater or lesser acidosis. With this in view it is easy to see that throughout a period of ten years treatment with old insulin, probably five of them will be spent in acidosis of a greater or lesser degree, and this with the resulting effects of a gradually increasing arteriosclerosis. Therefore protamine zinc insulin or any other agent which maintains the blood sugar level at a more even level will correspondingly lessen these cumulative effects with their dire consequences. Intelligently used, protamine zinc insulin appears to reach more nearly this ideal in diabetic management, and it is this which, in my opinion, is the essential item in the matter. The public with its distaste for needles is already widely heralding the new insulin for the very trivial reason that only one or two doses a day are necessary. Naturally, wherever we can spare discomfort we should do so, but we should also have our diabetics understand that the greatest value of protamine zinc insulin lies in the better control of the disease, and that we shall not hesitate to supplement it with old insulin as often as

seems necessary should it not produce the desired results in a given case. Our intelligent and properly trained diabetics will immediately appreciate the wisdom of this attitude.

You may be sure that it was with clinical humility that I accepted the invitation to discuss this paper, one of whose authors is my former professor, and a man who was a leader in the field of diabetic investigation long before I knew what the term meant, and to whom I owe in great measure my interest in the subject.

Dr. William R. Minnich (Atlanta): I wish to thank the gentlemen for their kind discussion of the paper and I want to emphasize again that the use of protamine insulin is not entirely free of danger. The hypoglycemic shock produced as the result of this new insulin is prolonged and sometimes difficult to handle if one is not entirely familiar with its action. This is why we have suggested the use of milk and crackers along with a more rapidly absorbed carbohydrate such as orange juice in the treatment of this condition. It is most important that every patient who is changed from the use of the regular or old insulin to the new protamine zinc insulin should be followed carefully and thoroughly, either in a hospital or by frequent office visits, until the exact required dosage is known for each individual patient.

THE SPLIT SKIN GRAFT*

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The free transplantation of skin from one body surface to another for the purpose of resurfacing burns or other cutaneous defects has been a useful and well established surgical procedure for years. The quicker this resurfacing is done, the shorter will be the period of discomfort, the period of disability and the degree of impairment of function. The oldest and possibly the most universally used method of skin grafting now employed is commonly known as the Reverdin method consisting in the transplantation of small bits of skin from a remote body surface. This method still has rather definite indications for its use and its value is indisputable. It possesses one distinct advantage over all others in that it can be used on surfaces that are grossly infected with a fair assurance of a high percentage of takes. Furthermore it can be used with relative safety on a patient whose general condition is so poor as to demand a minor surgical procedure or one in whom the donor area is quite limited. However, there are cer-

tain objections to the method, among the most important being the appearance of the grafted area after healing has occurred. It gives a mottled irregular surface because the grafts cannot be cut of a uniform thickness—each graft being thicker near the center where more or less derma is included and thinner at the periphery. There is a scar around each individual graft and the final result is not pleasing and certainly its use cannot be recommended for exposed body surfaces. Another serious objection to this type of graft is that it is of little or no value in the correction of cicatricial contractures.

Another important development in skin grafting was a method described by Ollier in 1882, and by Thiersch in 1886. This method consisted in the transplantation of larger sheets of skin, theoretically supposed to contain little more than the epithelial layer. These grafts were cut with a large razor-sharp knife or a razor itself and have relatively fewer objectionable features than the smaller Reverdin grafts. If given half a chance they should take in as high percentage as the Reverdin grafts and can be cut easily and quickly leaving a donor area that will heal spontaneously in a relatively short time. This method, too, still has a field of usefulness and is recommended for use in such instances as forming the lining of the conjunctival sac or the antrum. The chief objections to the use of the thinner grafts are that they are apt to afford inadequate protection to a surface that is subject to trauma or friction and most likely will not correct the inequalities of the underlying surface. Last but not least objectionable, is that the thinner the graft the greater will be the degree of contracture and this may be as great as 60 per cent of the surface area.

The full thickness skin graft described by Wolfe of Glasgow, in 1875, overcomes many of the shortcomings of the Ollier-Thiersch method although as is to be expected there are certain undesirable features associated with this method also. Certainly this method produces the best cosmetic result and is usually recommended for use on the face. Full thickness grafts stand up best under trauma and afford substantial protection as well as maximum mobility over joint surfaces. These grafts contract less than any other probably because the derma has the power to resist con-

*Read before the Medical Association of Georgia, Macon, May 14, 1937.



FIG. 1-A
Cicatricial contracture at knee in a child 4 years of age following a burn sustained 13 months previously. Area had been covered with pinch grafts, the scars being clearly visible on lower abdomen. There were still several ulcers in the scar epithelium which refused to heal—child was unable to walk.

FIG. 1-B
Photograph taken 4 weeks following release of scar contracture, and covering the defect with split skin graft. Child now has full range of motion at knee. The dark area on outer surface of right thigh represents the donor area. This will whiten in a few months.

ness graft is both tedious and time consuming and leaves a defect which in turn has to be grafted or left to heal spontaneously if it is too large to permit drawing the skin edges together with sutures. The actual application of the full thickness graft requires meticulous care because it must be placed with due regard to proper tension and pressure and the maintenance of proper pressure for a period of three weeks postoperatively is essential for the best result. This means that the full thickness graft must be nursed carefully for a relatively long period of time and unless this is done, what appeared to be a complete take at the time of the first dressing may result in a partial or even complete loss if seen several days later.

The buried or tunnel grafts, while still used by some surgeons, have never achieved widespread popularity and have been used very seldom by the author. I can see no clear cut indication for their preference over one



FIG. 2-A
Cicatricial contracture of left foot and ankle in a child 3 years of age. Burn sustained in infancy. All the toes of this foot had been lost and the foot was drawn upwards until the sole pointed directly forward and child walked on his heel as shown in the photograph.

FIG. 2-B
Result following release of scar allowing foot to come down to normal position, and covering the resulting defect with split skin graft. It was not necessary to lengthen the tendons which were intact. Child can walk without limp and can dorsiflex foot almost in a usual range.

FIG. 2-C
Photograph taken with shoes on. The left leg is a little smaller than the right but will probably fill out in time. With shoes and stockings on there is no other visible evidence of deformity.

tracture, although a certain amount of contracture must be expected with any type of graft. Full thickness grafts are very susceptible to infection and one should expect a higher percentage of losses than with the thinner grafts. The technic of cutting a full thick-

of the other types and have not used a tunnel graft for a number of years.

The greatest advance in recent years on the problem of skin grafts has been made by Blair of St. Louis with the introduction of the split-skin graft in 1928. In addition he

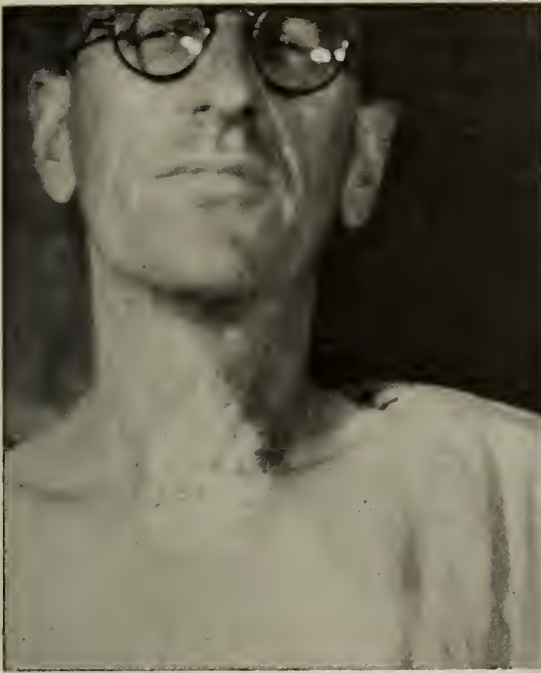


FIG. 3-A

X-ray burn on neck of a man 59 years old following a series of 30 or more treatments for goiter. Skin irritation began 2 years following completion of treatments and became so painful that he had been unable to wear a collar for 15 years. Also there was so much scar that patient could not extend his head.

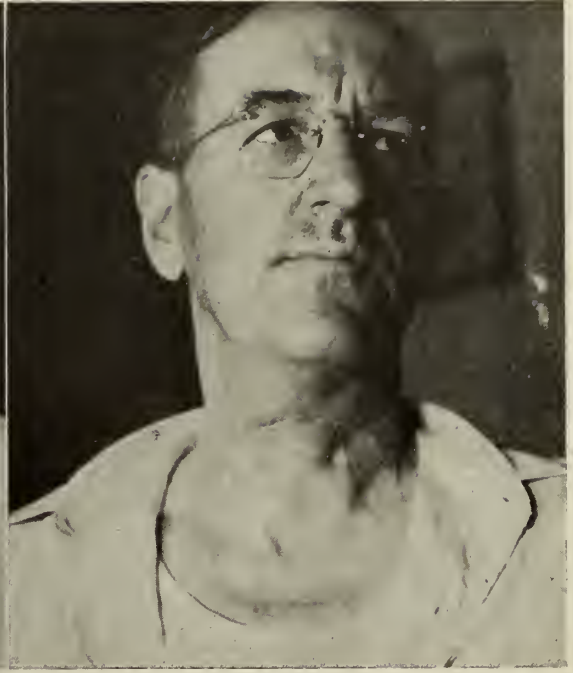


FIG. 3-B

Taken 2 months following excision of the involved skin and underlying scar and covering the defect with a split skin graft. Patient has had complete relief of his pain and discomfort and full range of motion of head.

presented a special suction retractor and knife which greatly facilitate the removal of the graft. The split-skin graft is in reality a modification of the Ollier-Thiersch method, the main difference being that the split graft contains epidermis and a portion of the underlying derma whereas the former, as mentioned before, theoretically contains nothing more than the epithelial layer. As Blair has pointed out, this graft has more of the good than bad points of either the Ollier-Thiersch or the full thickness graft. With sufficient practice in the use of the suction retractor and knife it is possible to cut a single graft of from twenty-five to fifty square inches from suitable areas. Furthermore, one can cut a graft of uniform but almost any desired thickness from the thinnest to practically a full thickness graft in a very few moments. It must be emphasized here that the instruments do not themselves cut the graft—the surgeon must do that—and although the instruments are an invaluable aid, it requires practice and experience in their use to cut a suitable graft.

It goes without saying that the presence of pustules in the skin is a definite contraindication to any kind of skin grafting because infection is the principal cause of at least 90 per cent of the failures to "take." Even a

single pimple in the donor area is sufficient reason to postpone the operation until it is cleared up and one cannot be too careful in the strictest observation of this surgical principle. Another point to be remembered is that a split graft cut from a donor area that is hair bearing is apt to grow hair and this may be an objectionable feature if it is to be placed in the mouth or on the face of a female patient. This may necessitate cutting the graft from the front of the abdomen—an almost impossible donor area without the use of the suction retractor. The easiest donor area from which to cut the largest grafts is the inner surface of the thigh, and it is much easier to cut a graft from the young adult whose skin and subcutaneous tissue are firm than from an elderly person whose skin is inelastic and flabby. The anterior and outer surfaces of the thigh are rather difficult areas from which to cut a satisfactory graft of any great size but the posterior surface can usually be used to advantage. Having selected a donor area it is prepared with half strength tincture of iodine and alcohol or any other suitable skin antiseptic, draped with sterile dressings and covered with a thin layer of vaseline to permit the suction retractor to slide easily over the surface. Care must be taken not to apply too



FIG. 4-A

Carcinoma developing in a burn scar of the axilla in a woman of 42 years who sustained the burn at 8 years of age. There was a constant dirty discharge and area was so painful that she took sedatives every hour.



FIG. 4-B

Result obtained by doing a cauterization excision of the involved area and at a later date covering the granulating surface with split skin grafts. About 6 months later developed axillary nodes and an axillary dissection was done. Examination of the glands showed definite metastases. Has had no further trouble and it is now over a year since the last operation. She has been relieved completely of pain and has a good range of motion of her arm.

much vaseline which will defeat its purpose. The suction is turned on, the retractor held in the left hand is applied to the skin which is sucked up to a flat surface and counter pressure is applied by an assistant by the use of a small straight-edged pan or flat board splint below the knife. The knife, which must be kept razor sharp, is held almost parallel with the skin surface. As the suction retractor is slid slowly along the skin, the graft is cut by a sawing motion of rather bold strokes of the knife. If the knife should go through the entire thickness of the skin it is best to stop and begin again in a different area but this is a rare complication after one has had experience in the method. It is always desirable, where possible, to cut a graft large enough to cover the entire defect and to slightly overlap the edges and in any case to use as few grafts as possible to have them of uniform thickness.

The preparation of the area to be grafted is important and deserves some mention. As for the donor area, the presence of pustules in

and around the area are a contraindication to operation. The healing power of the patient must be as near its peak as possible and the presence of pustules suggests a rather low resistance on the part of the host to that organism. Usually a constant warm moist saline, or boric, dressing changed at frequent intervals will in a few days clear up such infections and it may be of value to give a course of autogenous vaccines to the patient. It is never desirable to graft an area that has had vaseline or grease dressings without first having substituted a wet dressing for two to three days after discontinuing the vaseline. In the preparation of a granulating area I do not feel that it is necessary to do such complicated things as bacterial counts before grafting but rely on the gross appearance of the granulations and the character of any discharge. As a general rule, a wound covered with healthy, bleeding granulations with a mucus-like discharge and free from surround-



FIG. 5-A

Recent burn involving practically the entire dorsum of hand and fingers sustained 4 days previously when patient caught her hand in a laundry press. The entire thickness of the skin had been lost but fortunately the tendons were not injured.



FIG. 5-B

Taken 5 months after covering the burned area with split skin grafts. Wound was healed in 3 weeks and patient was able to resume work within one month. Had full range of motion of fingers and early grafting prevented any stiffness of joints or limitation of motion.

ing pimples or pustules is ready for grafting. For preparation of healed cutaneous areas, any crusts or scales should be removed, the area thoroughly cleaned with soap and water followed by a skin antiseptic.

In the cases where there is a granulating surface, the granulations are cut away down to the scar base, the scarred borders excised, any hemorrhage controlled and the grafts applied as soon as the bed is prepared. The grafts are sutured to the surrounding skin margins with a little overlap using continuous horsehair sutures and paying especial attention to keeping the skin under as near normal lateral tension as is possible. After the graft is sutured in place small stab wounds are made in it at appropriate intervals to allow for the escape of serum or blood. The presence of a blood clot underneath a graft will prevent a "take" of the overlying skin and furthermore may be a source of infection.

The dressings are almost as important as the operation. It is my custom to first apply two layers of 4 per cent xeroform gauze followed by a rather thick layer of gauze moistened in saline or boric acid and over this place a large, damp marine sponge which is not allowed to touch the skin edges; this is in turn fixed and held in place by a firm pressure bandage. On occasions where there is some

question as to the cleanliness of the wound the xeroform may be omitted and wet gauze applied directly over the graft, incorporating in the dressing small rubber tubes, the ends of which are left out to permit frequent moistening by injecting saline or boric solution through the tubes at intervals. The marine sponges and pressure dressing are applied as usual. Next to infection, other things that may prevent a "take" are too much pressure, too little pressure or inadequate fixation of the graft.

This type of dressing must obviously be changed for certain cases such as inside the mouth, lining the nostril, restoring the conjunctival sac, or lining the orbit and because of lack of time it is impossible to describe in detail the method of handling these rather complicated problems. Sufficient to say, this type of graft is satisfactorily and successfully used in the above cases.

As a rule, the first dressing is not changed until the fifth or sixth day at which time the sutures are removed, the overlapping necrotic edges cut away and any blood clot or collection of pus or serum underneath the graft is evacuated by splitting the graft. If there is a complete take and the graft is free from infection, a grease dressing may be applied but more often a wet dressing is used for several



FIG. 6-A
Syndactyly involving middle and ring fingers in an infant.



FIG. 6-B
Infant was operated upon at 8 months of age. Fingers were separated and a dorsal tongue shaped skin flap with base at knuckles was thrown between the fingers. This left small areas on each finger that had to be covered with split skin grafts. Photograph taken 3 months following operation. Child has full range of motion of all fingers and the grafted areas are inconspicuous.

days, although in either case the sponge pressure is left off. Healing is usually complete in about ten days, although it is advisable to keep the area covered with a simple protective dressing for another week.

The donor area is dressed with nine or ten layers of xeroform gauze covered by a moderately thick pad of dry gauze, taking care to apply both layers exactly to the edge of the defect and holding them in place by adhesive liberally applied. This tends to diminish pain by preventing motion of the dressings over the raw surface. The dressing is not changed until after ten or twelve days at which time healing is usually almost if not entirely complete. The regeneration of epithelium comes from the derma and from hair follicles which are left behind and the resulting surface is usually smooth and not at all unsightly. In fact, should the occasion arise, it is possible to remove a graft from the same donor area several times.

DISCUSSION ON PAPER OF DR. WM. G. HAMM

Dr. C. K. Wall (Thomasville): I am greatly indebted to the essayist for this unusual subject brought before the meeting. The term "split skin graft" is comparatively new. It is something like the fellow in the school who asked about the law of gravity, saying, "As I

understand it it is not very well understood." So split skin graft is apparently an improvement on the old Ollier-Thiersch method which I have been using for a good while, and I am glad to know there is this improvement being brought out now, and having seen some of Dr. Hamm's work I can readily endorse the type of method he is using.

The graft, as he uses it, is simply, as I understand it, a thicker, heavier graft, and the method of taking the graft is simply an improvement over the old long-knife blade when we used to use the Ollier-Thiersch method. This has always been an improvement, in my mind, over the pinch graft, which gives you so many small grafts which give a sprinkling of skin over the area, with a rather hit-or-miss method of taking. If you put the skin on with a smooth, even graft, you get much better skin surface and much more lasting and better surface for resisting of irritation or friction.

Dr. H. S. Alden (Atlanta): You have just listened to a paper of an artist, and also to an artful paper. Plastic surgery is one of the arts left in medicine. I think it demands a very particular and accurate type of work. Certainly from a dermatologic standpoint, most of our work which goes to the surgeon requires cosmetic repair, and it must be well done, or becomes useless. I hope you will all heed this paper.

Dr. William G. Hamm (Atlanta): There is just one more point I should like to emphasize. Any type of skin grafting that is used, whether it is a pinch graft, Wolfe, Ollier-Thiersch, or split, must be an autogenous graft. We have tried grafting patients with the same blood grouping, mother and child, brother and sister, and I saw skin from a newborn fetus applied to an area in hopes that embryonic type of skin might work. In each of these cases the skin will take and will stay for a period of from four to six weeks, and then apparently it just melts away. I have never seen a permanent result from a homogenous graft. The person being grafted must furnish the skin himself.

There is only one indication, as I can see it, for using a homogenous graft. Occasionally we get a child so badly burned that he has very little skin to be used in grafting, and these cases sometimes seem to reach a standstill in the healing. On those occasions we have taken skin from the mother and applied it directly on the granulations, without first cutting the granulations away. The skin will frequently take, but melts away in the course of a few weeks, as I said before, but it does seem to stimulate the proliferation of epithelium in some way, and we feel in a few cases that we have gotten some benefit from a homogenous graft, but by and large autogenous grafts are certainly to be used where possible.

DR. J. EDWIN HAGMEIER, Preston Springs, Ontario, Canada, made a report on the treatment of 993 children (200 were not treated) with a solution developed by Dr. Max Minor Peet, University of Michigan, for the prevention of poliomyelitis. Only one child of the 993 treated developed the disease and that was within ten days after the treatment. It was possible that it contracted poliomyelitis before the treatment was given.

CONCERNING PRIMARY AND SECONDARY MALIGNANT TUMORS OF THE CHOROID*

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Atlanta

Since an educational program against cancer is now being waged in this State, it may be appropriate to say a few words concerning certain malignancies of the eye, for malignant tumors of the choroid are often fatal.

Two types of malignant tumors affect the choroid: first, sarcoma, usually a primary lesion; and second, carcinoma, a secondary lesion. The subject is illustrated by two cases.

Case 1. Melanosarcoma of the choroid, with metastasis to the liver and lungs two years and eight months later.

In 1909, Mr. C. H., aged 42, was first seen complaining of difficulty on reading.

His family and past histories were negative, except for the fact that his sight had been defective in the left eye for many years. There was no record of previous ocular infections or injury.

The ocular examination showed: vision, right, 20/20; left, light perception.

Upon viewing the fundus, there was found peripheral striations in the right lens and a normal disc and retinal vessels, but situated about 4 disc diameters down and in from the disc, there was seen a slate-colored area in the subretina about the size of the disc, with a diffuse halo of brownish pigment bordering the upper and inner margins of it. Across that area coursed retinal vessels. In the left eye there was a mature cortical cataract. The central light perception was faulty and the color of the iris was lighter than that of the right side. No precipitates were seen.

The abnormality noted in the choroid of the right eye was regarded as a benign melanoma, or so-called naevus, which is occasionally seen on routine ophthalmoscopic examinations and usually thought to be harmless. An appropriate reading glass was ordered, but on account of the rapid changes in the right lens, it was changed frequently.

In 1917 the cataract was removed from the left eye, and after a prolonged convalescence due to an iritis and secondary membrane, the ultimate vision was 20/15.

In 1924, the cataract which had matured in the right eye was successfully removed. It is interesting in passing to note the remarkable recovery of vision in the left eye that had been blind for at least 20 years, and the final binocular single vision after the removal of the right cataract, in spite of a former periodic divergence in the left eye.

In March, 1934, while in Emory University Hospital for an intestinal disorder, he first noticed with

the right eye a distortion of objects and an inability to see in the upper field, although for three weeks previously he was aware that something was wrong.

The corrected vision then was: right, 15/40; left, 15/15.

The ophthalmoscopic examination of the right eye showed a large smooth, globular detachment of the retina involving the lower nasal portion of the globe, partly covering the lower and inner margins of the disc and extending forward well beyond the equator of the globe. The retinal vessels bent in characteristic fashion over the dark slate-colored detachment and they could be followed into the normal retina toward the periphery.

Transillumination of the globe showed a definite shadow in this area. The intraocular tension was: right, 12; left, 23 mm. Hg. (Schiotz). It was our opinion that there was a tumor mass involving the choroid, most likely a sarcoma, with a secondary retinal detachment. But the patient volunteered the information that in Nov., 1933, he received a severe blow to the right eye and right side of the head. However, our opinion was presented to the patient, who was our warm friend, and we insisted that the diagnosis be confirmed before enucleation. This was done in Atlanta and New York, and in April 1934, the globe was removed under local anesthesia, with an uneventful recovery. In due time a prosthesis was adjusted, and the socket always remained clean and healthy.

In Dec., 1936, he became ill with pulmonary and abdominal symptoms and died on Jan. 13, 1937.

A clinical diagnosis of metastatic sarcoma of the liver and lungs was then made which was confirmed by partial necropsy.

The pathologic diagnosis of the eye tumor made by Dr. E. L. Bishop was a mixed cell melanosarcoma of the choroid. There was no extraocular extension and the optic nerve was not involved.

Sections of the tumor treated by silver impregnation (argyrophilic stain) showed that the reticulum of the tumor was moderately abundant in most areas.

The section of the liver showed the same general types of cells found in the primary lesion, with an abundance of pigment in the larger cells. There was much destruction of the liver parenchyma and considerable necrosis.

Sarcoma of the choroid is generally regarded as a primary lesion and is comparatively rare, occurring in about 1 in 2,500 eye patients, usually after the fourth decade of life. However, a few cases have been recorded where the eye has been involved in a general metastasis in which the primary lesion was believed to have been a malignant melanoma of the skin.

The first subjective symptom is disturbed vision. The clinician usually recognizes or suspects a tumor beneath a retinal detachment, through which area a beam of light is not transmitted. Even in an earlier stage an ophthalmoscopic examination may show a

*Read before the Medical Association of Georgia, Macon, May 13, 1937.



FIG. 1
Mushroom like melanoma of choroid.

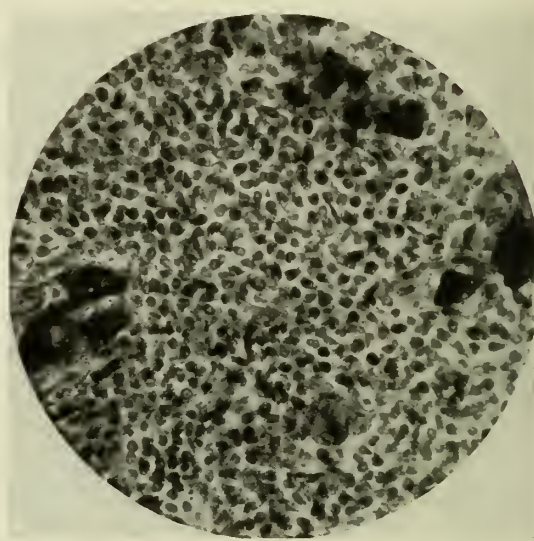


FIG. 2
Mixed cell sarcoma of the choroid.

slightly elevated, pigmented area in the choroid. As the tumor grows, the retina becomes more detached and the intraocular tension is eventually elevated. Orbital extension may take place and finally there may be metastasis, usually to the liver and lungs.

It is evident, then, that an early diagnosis and prompt enucleation of the globe offers the patient the best possible chance for relief. A large tumor does not necessarily indicate that it is highly malignant, for extraocular extensions and even metastasis have been reported in very small tumors.

It was formerly regarded that the round cell variety of sarcoma in which there was much pigment, was the most malignant, and when metastasis occurred it was usually within the second or third year after enucleation. There are exceptions, of course, and cases are recorded where metastasis did not occur for 10 to 20 years. It is the general belief of most clinicians that if the patient can get by the 5 year period, he may be regarded as being safe.

If malignant cells are found on histologic examination outside of the globe a very important and debatable question arises. Should the orbit be exenterated? Some surgeons advocate this radical procedure while others employ postoperative irradiations. Von Hippel expresses the belief that should a few tumor shreds be left in the orbit, they may become encapsulated in the shrinkage of Tenon's capsule and later undergo atrophy. On the other hand, equally competent ob-

servers maintain that orbital recurrences grow rapidly.

We have been fortunate in not having seen an orbital recurrence, and Knapp believes that this complication is unusual. Whether postoperative irradiation of the orbital contents would reduce orbital extension or metastasis is debatable, but since Byers places orbital recurrences at approximately 10 per cent (which we believe is too high), we would advocate it as routine practice.

It is conservatively estimated that metastasis takes place in about 25 per cent of all types of choroidal sarcoma. It is through the blood stream that these cells travel, and the organs commonly involved are the liver and lungs. Yet extraocular extensions are known to take place by the permeation of the perivascular lymphatics in the sheaths of the emissary vessels of the globe, or by direct infiltration of the sclera.

In Callender's cellular classification of malignant melanomas of the choroid, and his follow-up in 120 cases, he has shown that the most malignant types were the epithelioid, fascicular and mixed cell, and the least malignant was the spindle cell type. More recently he has observed that tumors containing the smallest amount of reticulum were more prone to malignancy, and conversely with an abundance of reticulum fibres in any type of tumor the prognosis would be favorable.

The study of a large series of cases will be

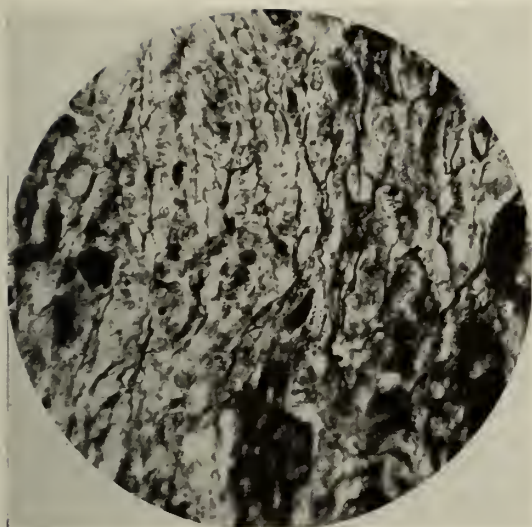


FIG. 3
Same specimen with argyrophilic stain showing moderate amount of reticulum.

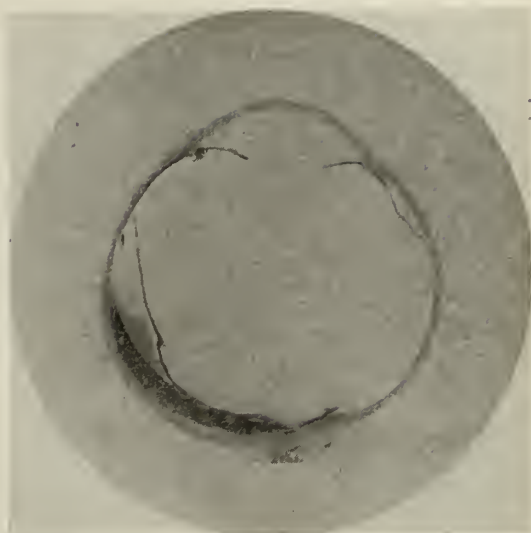


FIG. 4
Metastatic carcinoma of choroid.

necessary before this important observation will be universally accepted. Callender and his fine corps of workers at the Army Medical Museum, supported by the larger clinics of America, are now at work on this problem.

In the history of the case here presented two important facts should be recalled: (1) the area of pigmentation noted in the choroid in 1909, and (2) the history of trauma to the eye in 1933. We are conscious that trauma to tissues is sometimes regarded as an associated cause for the development of sarcoma. In this case we regard it as a problematic and exceedingly doubtful cause. We feel strongly that the tumor had its origin in the pigmented area of the choroid, despite the fact that it has not been proved by the examination of serial sections of the globe. This, indeed, is a rare occurrence.

Case 2. Carcinoma of the choroid secondary to an adenocarcinoma of breast which was removed 15 months previously; generalized metastasis 20 months later.

Mrs. D. M., aged 35, was seen Dec. 4, 1935, with the history of progressive defective vision in the left eye for some months past, but more especially since an automobile accident 6 weeks previously at which time the right side of her head was injured. Her past history was irrelevant except for the important fact that in Sept., 1934, the left breast which contained a mass, was removed by a competent surgeon. A radical operation was done, including the removal of the axillary glands. The pathologist's diagnosis was adenocarcinoma. Appropriate postoperative roentgen-ray treatments were given, and healing and recovery were prompt.

The right eye was normal in every detail. The vision of the left eye was 15/200. The fundus examination showed a slightly raised yellow-brown area of the chorio-retina in the upper outer part with a flat retinal detachment extending from the disc to about the equator of the globe. By deep transillumination a distinct shadow was detected over most of this area. With the fundus picture and operative history, there was little hesitancy in expressing an opinion that there was a metastasis to the choroid.

The patient's family and physician were informed of our findings and it was their desire that the globe be removed. A general physical examination of the body and roentgen-ray examination of the chest were made, and no other sign of metastasis was found. After enucleation, on Jan. 14, 1936, the healing was uneventful and a well fitted prosthesis was adjusted. The patient was happy and free of anxiety until May 1936, when she developed pain in the right hip; later a bronchitis and an aphasia and, in July 1937, she died with symptoms indicative of metastasis to the brain, liver, lungs and spinal cord. Necropsy was not permitted.

The pathologic examination of the eye, made by Dr. E. L. Bishop, showed in part a flat tumor involving the choroid beginning at the nerve head and extending about one-fourth of the circumference of the globe on the temporal side. The tumor cells appeared to enter the globe along the dural and pial sheaths of the nerve and the accompanying perivascular spaces.

The neoplastic cells in the choroid formed large alveoli of hyperchromatic cells without glandular formation. Mitoses were numerous. There were neoplastic cells in the orbit adjoining the globe.

The diagnosis was metastatic adenocarcinoma of the choroid. It was Dr. Bishop's opinion that the tumor was of considerable malignancy, as was the primary mammary tumor which he had previously examined, and widespread metastasis was expected.

Metastatic carcinoma of the choroid is ex-

ceedingly rare, and is associated with wide dissemination.

We have records of only five cases, two of which were bilateral. In all of these cases the primary lesion was in the breast, by far the most common site. Other sites, in the order of their frequency, are: stomach, lungs, intestines, thyroid and prostate.

Our experience leads us to agree with Parsons that the left eye is most commonly involved, probably for the same reason of left cerebral embolism, namely, the more direct pathway of the left carotid which comes off from the aorta, while the right carotid branches from the innominate. For these reasons it seems logical to believe that the condition is embolic, although tumor cells encircling the penetrating scleral vessels have been recorded. Likewise, for anatomic reasons, the posterior portion of the globe, or that portion of the choroid surrounding the disc, is invariably attacked, due to the penetration of the posterior ciliary arteries.

When the tumor cells enter the eye, the progress of the disease is rapid and vision quickly fails due to the detachment of the retina. Usually it is a sign of general metastasis and death ensues within a few weeks or months, although it may be delayed as long as 2 years.

Differing from sarcoma of the choroid where the growth is usually circumscribed and often mushroom-like, carcinoma of the choroid is always flat, except in late cases when it breaks through Bruch's membrane. Its cells spread rapidly forward in the choroid toward the ciliary body in finger-like projections, always along the lymph spaces of the choroid vessels.

The ocular growth often shows cellular changes and arrangements which resemble the primary lesion and organ from which it sprang. Parsons mentions Bock's case, in which "there was a definite tumor deep-green in color, consisting of large polygonal and cylindrical cells arranged in tubules like liver cells. The lumina of the tubules contains bile, giving the test for biliverdin."

The removal of an eye with a carcinoma of the choroid offers no hope for prolonging life, for the eye tumor is evidence of widespread metastasis; but as the eye tumor usually grows rapidly and the intraocular pressure is in-

creased, the patient ultimately seeks relief on account of a painful or congested globe. Enucleation then is inevitable, if life is prolonged.

This patient, her family and attending physicians had previously received this information and she voluntarily selected to have the eye removed. We are confident of her mental relief.

Briefly reviewing the subject and the two cases, it is evident that in sarcoma of the choroid the earliest possible diagnosis and enucleation of the globe offers the patient the best possible chance against metastasis. We should not hesitate to advise the removal of an eye with a retinal detachment in which a tumor is suspected, for nothing is lost but a blind eye.

In the first case reported, the pigmented area in the choroid noted 26 years previously was probably the original site of the tumor. This opinion is not proved, but the conclusion seems logical.

We believe that the postoperative irradiation to the socket offers some prevention to metastasis.

We have never encountered a sarcoma of the choroid in the pure Negro.

Carcinoma of the choroid is definite evidence of present or impending widespread dissemination from the primary tumor.

Early diagnosis and complete eradication of the primary lesion offers the only hope against metastasis.

DISCUSSION ON PAPER OF DRs. CALHOUN AND HALLUM

Dr. J. F. Chisholm (Savannah): Tumors, either primary or secondary, of the choroid are unusual and few ophthalmologists have an opportunity of coming in contact with many of these cases unless they are attached to some large clinic. All authorities agree that intraocular tumors are noted, first, for their rarity, and secondly, for their malignancy.

Dr. Calhoun said: "Sarcoma of the choroid is generally regarded as a primary lesion and is comparatively rare, occurring in about 1 in 2,500 eye patients." This seems to me a very generous average and I would have said one in 5,000. I have had one case recently (Feb. 2, 1935), of melanotic sarcoma of the choroid occurring in my practice with removal of the eye. The pathologic diagnosis was confirmed by Dr. Lee Howard. I saw this patient one month ago and she is apparently free of any metastases. This tumor was primary.

Dr. Calhoun said that early diagnosis and prompt enucleation of the globe offers the best hope of cure. It is my practice to advise early enucleation in all lost eyes that are in any way suspicious of an intraocular

growth. If malignant cells are found on histologic examination outside the globe, by all means advocate postoperative irradiation and not exenteration. I think Dr. de Schwinitz makes this statement in his book: "Local recurrences 2.5 per cent, metastasis 41.5 per cent, cure 56 per cent." Dr. C. A. Clapp found reports of 118 cases of metastatic carcinoma of the choroid, stating that the breast was the most common focus for metastases with the lungs next, occurring three times as frequently in the female as in the male. The left eye is generally involved and is thought to be due, as Dr. Calhoun said, namely, through the most direct pathway of the left carotid. It is generally agreed that the post portion of the globe is the portion usually involved. Here again personal experience is limited, but I would like to add a case of primary adenocarcinoma occurring in a male patient, aged 50, in right eye (Aug. 4, 1936). Diagnosis was confirmed by the Army Medical Museum following enucleation of the globe Aug. 7, 1936. Metastases occurred Oct. 29, 1936, as shown on biopsy by Dr. Lee Howard. Subcutaneous nodule of the scalp was taken for examination and reported adenocarcinoma, most likely metastatic. On Nov. 29, 1936, the patient died. No necropsy was held but another biopsy from an enlarged gland of the neck was done by Dr. Howard and the diagnosis was again confirmed. Dr. Calhoun states that the removal of an eye with a carcinoma of the choroid offers no hope of prolonging life, for the eye tumor is evidence of wide metastasis. It is generally stated that 7.87 months is an average. Certainly this case of mine conformed to this, even if it was a primary carcinoma, the patient lived only a little over three months.

I again wish to thank Dr. Calhoun and Dr. Hallum for their splendid paper and I hope that we oculists will be more alive than ever to these conditions for it is only through early diagnosis that we can hope to be of any real benefit to the patient.

Dr. E. L. Bishop (Atlanta): I enjoyed Dr. Calhoun's and Dr. Hallum's paper, and also appreciated the privilege of having examined both of these cases which they reported this morning. The whole group of eye tumors is an extremely interesting one. There are comparatively few of the different types of eye tumors. We have certain types which are common in children, or more common in children, the so-called retinal glioma or retinocytoma, within the eye, and the myxosarcoma behind the bulb, and in adults, sarcoma and the various metastatic tumors to the organ. I have not seen a case of melanoma of the eye in a child, but I see no reason that it could not occur at the same time. In adults, melanoma is the common tumor, if we can call one in such a large number of cases, common.

Metastatic carcinoma is much rarer and, as has been brought out, it usually occurs as metastasis from the breast, and a few cases from the prostate and from the lung and a few other organs. Notice we use the term "melanoma" in preference to melanosarcoma or melanocarcinoma. There is a great dispute as to whether these tumors are carcinomas or sarcomas. This is because of the fact that melanoma has been thought to arise from a specific mesoblastic cell, and, if that is so, then the tumors are probably sarcomas. On the other hand, the

work of Masson has brought out the fact that melanoma is related to the neurogenic system and for that reason those in the skin arise from the neurogenic system and therefore these are of epithelial origin. Dawson of Edinburgh reported a large series of melanomas and claimed epithelial origin for all, including those of the eye, stating they came from the retina and not the choroid.

Dr. Calhoun mentioned the fact that he had not seen a case of melanoma of the eye in a Negro. I have seen one case in Grady Hospital. A few years ago I reported eleven cases of melanoma in the Negro, and one case occurred in the eye.

One of the slides Dr. Calhoun showed you was of the reticulum stained section, which is something rather new, brought about by Colonel Callender and Mrs. Wilder of the Army Medical Museum, and their work, which is still being continued, leads us to believe that there may be something in this process stained especially for reticulum, to give us an idea as to the grade of malignancy and a prognosis as to the life of the patient.

The question of pigment has no bearing upon malignancy because some of the most malignant melanomas we see may be devoid of any pigment whatsoever.

In regard to metastatic carcinoma occurring in the eye, as Dr. Calhoun mentioned, it does not offer any chance for extending the life of the patient by removing the eye, because if it reaches the eye the patient has, although it may be undiscoverable, a rather widespread metastasis at that time.

Dr. William O. Martin, Jr. (Atlanta): There are only two or three things that I like to bring out. One is the question of glaucoma, which is often misleading. If a tumor involves the area near one of the vortex veins, it is more apt to produce early glaucoma. In addition to this, if there is an iritis present and tumor cells in the aqueous, the iris angle is very apt to be blocked and thereby produce a glaucoma. Another condition which is often present and prevents an early diagnosis is that of a cataract which obscures a view of the fundus. In regard to the prognosis, as Dr. Bishop mentioned, Major Callender of the Army Medical Museum is doing some interesting work on the silver staining of fibers. Those tumors which stain or take this silver stain are less malignant, he thinks.

Dr. George B. Smith (Rome): Dr. Calhoun has presented a very interesting subject, and since the ophthalmologist in a small town sees only a comparatively few of these cases, he is frequently confused. I recall seeing a case about five years ago, in which I enucleated the eye and the diagnosis was carcinoma. Having always been taught that carcinoma was secondary and that primary tumors were sarcomatous, I was somewhat confused at the time. Five years later, last year, this woman presented herself for an exploratory operation for disturbance of the liver. Biopsy was done and carcinoma was found.

I want to thank Dr. Calhoun for clearing up a thing that has always confused me, that you may have either carcinoma or sarcoma as a primary lesion. It would probably be better to call these cases malignant melanoma.

X-RAY THERAPY IN CARCINOMA OF THE BREAST*

THOMAS HARROLD, M.D.
Macon

Before the era of anesthesia, and indeed until about 1890, operations for cancer of the breast consisted mainly of local excision of the tumor, simple mastectomy and occasional incomplete removal of enlarged axillary nodes. The results of these operations were little if any better than those obtained by the ancient Egyptians and Greeks with the cautery and arsenic paste. With the advent of the radical operation devised by Halsted and Willy Myer, cures lasting 5 years and longer were seen for the first time except for the rare cases in which the disease was very early and confined entirely to the breast, and which were cured by simple mastectomy. Since about 1890 there has been no improvement in the surgical treatment of cancer of the breast. Nor have the results obtained improved except that women now seek treatment in earlier stages of the disease than they did 20 or 30 years ago. However, in Georgia, women are still slow to seek treatment and almost all of the patients have large nodes when first seen. In the past few years many physicians and large surgical clinics whose experience has extended over periods of 15 to 40 years have reported their end-results in treating cancer. These reports have been both surprising and disappointing. We are all apt to remember our good results and to forget our bad ones. Most of those men thought they were curing 40 to 75 per cent of their patients, but when the follow-up was complete, the figures from the best and most reliable sources showed that their 5-year cures were only 15 to 25 per cent. A few reported 30, 40, and 50 per cent, but they were such a small minority that one is inclined to doubt their figures or else presume that for some reason an unusually large proportion of their patients presented themselves in the earliest stages of the disease.

With the discovery of the roentgen-ray and its effect on tumors, it has been used in conjunction with surgery from 1905 to the present time. However, until about 5 years

ago, this therapy was given only following operation and as a palliative measure in far-advanced, inoperable cases. From our present viewpoint, the dosage was woefully small, entirely inadequate and, as might be expected, the results were correspondingly disappointing. Statistical studies covering this period show little if any increase in the number of 5-year cures over the number of cures obtained by surgery alone. However, these studies did show that the average duration of life was increased about one year by x-ray therapy.¹ The palliation obtained in a few cases was quite gratifying.

I think it is generally admitted that the surgical treatment of cancer of the breast has been developed to the limit of its possibilities and that little, if any, improvement in the results obtained by this method are to be expected. However, within the past few years the methods of treatment by x-ray have changed completely and there is every reason to expect very material improvement in our results in the years to come. Beginning about 1927, we began to hear reports of the work being done by Coutard in Paris. The results that he reported in the treatment of malignant tumors in various parts of the body by the use of x-ray therapy, either alone or in conjunction with surgery, and radium, were so far superior to those obtained by anyone else in the world that many were skeptical. He gave such large doses of x-ray that he deliberately produced extensive burns of the skin. X-ray burns had always been the nightmare of all men giving x-ray therapy and the frequent cause of damage suits. Coutard discovered that x-ray burns produced by small doses given daily over a period of several weeks always healed without serious damage to the skin, instead of producing the chronic painful ulcers such as had been seen when one large dose was given. He also found that the slow divided dose method of treatment yielded better results than had ever been seen before. Visitors to his clinic soon saw that his reports were true and found that they could duplicate his results in their own practice. In my opinion, the application of the Coutard method to the treatment of cancer of the breast is the first major improvement that has been made in the treatment of this disease since 1895. It is needless to say that this method has not been

*Read before the Medical Association of Georgia, Macon, May 14, 1937.

in use for a long enough period of time for final determination of its exact value, but suffice it to say that already we are seeing results that we have never obtained in the past.

Cancer of the breast has always been considered resistant to the effect of x-ray, but with the new method we are able to cause great shrinkage of the primary tumor and enlarged nodes in the axilla and in a majority of cases they disappear almost completely, leaving a small amount of scar tissue in their place. Microscopic examination of these tumors and nodes removed surgically after x-ray treatment sometimes show no remaining cancer cells (as happened in one of our recent cases) or only a few strands of sick looking cancer cells imbedded in dense scar tissue where their future growth would be slow or perhaps would not occur at all. In one of the last papers published by Bloodgood,² he reported three cases which had been treated by x-ray and then operated upon. In two it was impossible to obtain any growth of cancer cells in tissue cultures whereas such growth does occur when x-ray therapy has not been given. Dr. Bloodgood stated: "Apparently we have sufficient evidence to demonstrate that the moment irradiation of cancer of the breast is begun, there is no further growth of cancer cells in the cancer nodule." At another point in this same paper he stated: "It is less than 4 years since I took up preoperative irradiation, but I feel convinced of its value." Only too frequently, rapid recurrence in the scar and metastases appear soon after a radical operation. With the destruction or inactivation of the cancer cells and the closure of the lymphatics produced by preoperative x-ray therapy these recurrences should be avoided or greatly diminished. Adequate statistics to prove this point are not yet available as the work is too recent, but the opinions of those who have used this method are almost unanimous in its favor. Neither the profession nor the public is educated to this change, and it is difficult to persuade either to postpone operation for 2 or 3 months when all of their teaching has been to operate as soon as the diagnosis is made.

Most of the leading men in this work advise preoperative x-ray therapy in all cases which have palpable nodes in the axilla, but

some, including Adair,³ of Memorial Hospital in New York, do not advise it in early cases that are apparently confined to the breast. It is difficult for me to understand the logic of this position, especially as he stated that in 15 per cent of the patients in whom no nodes could be palpated before the operation, the pathologists found microscopic cancer in the axillary tissue removed. It seems logical to me that if preoperative x-ray therapy is of benefit to the more advanced cases, it should be of equal or greater benefit to the early cases. I am convinced that the proper occasion for the most thorough and radical treatment of cancer, whether located in the breast or elsewhere, is in the early case for it is in this group that we are able to attain the vast majority of cures. *Therefore, I feel very strongly that all cases of cancer of the breast should be given preoperative x-ray therapy and I believe that time and statistics will show a real improvement in our results.*

At the other end of the scale there is a distressingly large group of cases that are either grossly inoperable when first seen or are put in the so-called border-line group. In the past this unfortunate group of people has been subjected to the most radical and mutilating treatment with almost uniformly bad results. In the future I hope we will learn to recognize this group and treat them with x-ray alone. In many patients the tumor masses and metastases can be made to disappear or greatly decrease in size, ulceration can be avoided or delayed and their pain relieved. Distant metastasis has already taken place in these advanced cases, although it cannot always be demonstrated, and operation is useless. It is my impression that many of them suffer more, and actually die sooner, than if they had not been operated on at all. Until some effective means of dealing with distant metastases is discovered, x-ray therapy offers them more hope than any other treatment.

Between these two extremes lies a group of cases that is still relatively early but nevertheless have a few small movable nodes in the axilla. There is still a chance that distant metastasis has not occurred so they should be given preoperative x-ray therapy and then have the radical operation. Additional x-ray therapy may be given later in the event of recurrences or metastasis.

Another new and most promising attack on cancer of the breast has been developed recently. We know of the great influence of the ovaries upon the development and growth of the normal breast. We have long observed the rapid growth and the fatal course of cancer of the breast in pregnancy, in spite of any kind of treatment. It has also been shown experimentally that mice with the hereditary form of breast cancer will not develop cancer at all if their ovaries are removed before they are 3 months old. If the ovaries are removed from mice at 4 months some of the animals develop cancer, and some do not, but if they are allowed to reach a certain age the total number expected to develop cancer do so. Cancer of the breast has also been produced in male mice of the same strain by giving them large doses of estrogenic hormone over a long period of time. It is also of interest to note that the chemical structure of estrin is similar to that of some of the carcinogenic agents found in coal tar. Taylor⁴ of New York, who has done a great deal of work on this problem, states that while the ovarian hormone is essential for the development and preservation of the epithelium of the mammary gland, hormone states comparable to those necessary to produce mammary carcinoma in mice by the injection of estrogenic hormone are unknown in women. He concludes that there is no clinical evidence yet of any specific endocrine dysfunction as the cause of human breast cancer.

On the other hand, Herrell⁵ of the Mayo Clinic reports that in a series of almost 2,000 cases of cancer of the breast only 1.5 per cent had had both ovaries removed before the development of the growth, whereas the incidence of complete oöphorectomy in a control group of women entering the clinic for reasons other than cancer of the breast was 15.5 per cent. In other words, it would appear that women with normal ovaries are more likely to develop cancer of the breast than are women who have had both ovaries removed. It is also a well recognized fact that breast cancer in women past the menopause, and particularly in old women, runs a much slower course than in young women. Aside from the theoretical considerations discussed above, in actual practice it has been found that if the ovaries of a woman suffering from cancer of

the breast are removed or destroyed by means of x-ray therapy (which is the practical way to do it), that there is frequently a very definite regression both in the primary tumor and in the metastases. The ultimate value of this procedure is to be determined but it is such a logical and reasonable theory that I am recommending and giving x-ray therapy over the ovaries to those women with cancer of the breast who have not yet reached the menopause.

So far in this paper I have dealt with methods that seem to me to be sufficiently well established to warrant adoption and thorough trial by every one treating cancer of the breast. However, I also wish to emphasize the fact that both care and experience are necessary if the Coutard method of giving x-ray therapy is to be used. The dosage is large, blistering of the skin is deliberately produced, and in some cases temporary anemia and leukopenia develop as an effect of the x-ray on the blood-producing organs. This procedure is comparable in magnitude to a major operation and should be watched as carefully. The patient and the patient's family and physician should understand what is being attempted and what reactions are to be expected. By observing these safeguards, so far I have had no serious complications and have seen favorable results that I never saw before.

Two papers^{6,7} recently published report better 5-year results in early cases where the tumor is confined to the breast when only a simple mastectomy and x-ray therapy are used than when a radical operation is performed. Not enough evidence from different sources has been published to consider that this change in treatment is of proved equality or superiority to radical operation but it is certainly of great interest. The radical operation for metastatic nodes in the neck from cancer of the tongue and lip has been almost universally abandoned as useless and radiation therapy substituted. Coutard has reported a number of 5-year cures in cases of this type. With present and future improvement in x-ray therapy we may see the scope of the radical operation for cancer of the breast greatly narrowed within the next 10 or 20 years, but we have not yet arrived at this point.

It might be of interest to report very briefly a few cases as examples of our management of the group as a whole.

Case Reports

Case 1. Mrs. J. M. E., aged 54. This patient stated that she was first aware of the lump in her breast just one week before I saw her. On examination she had large pendulous breasts with an indefinitely outlined tumor about 2½ inches in diameter in the upper and outer quadrant of the right breast. There were no palpable glands in the axilla. After careful examination, a diagnosis of carcinoma of the breast was made. She was immediately started on a preoperative cycle of deep x-ray therapy, and was given 2,000-R units through each of four ports, including one above the clavicle. This resulted in a marked erythema of the skin with some blistering in the axilla and in the folds of the breast. On examination 6 weeks after completion of the x-ray treatments, except for slightly firmer texture at the site of the tumor, no definite tumor mass could be outlined. This firmness is probably due to a fibrosis in the tumor. We expect to do a radical operation on this case within the next few days and will await the report of the pathologist with interest.

Case 2. Mrs. E. A. F., aged 32. In June, 1935, this patient had a very small lump removed from the right breast which she had first noticed 5 months previously. Although the pathologist reported this tissue to be malignant, the physician who was in charge of her at that time gave no further treatment. In Feb., 1936, another small mass was discovered at the site of the previous operation and again the physician removed it locally and did nothing else. In Aug., 1936, when she consulted us, most of the right breast had been replaced by a tumor mass, with fixation of the nipple and an enlarged firm node in the axilla. This patient presented many problems and might have been managed in several different ways. We began by giving her the same type of treatment as the previous patient received. After two months the node in the axilla had completely disappeared and the tumor in the breast had shrunk to a very small size and was quite hard and fibrous. This patient was also given a sterilizing dose of x-ray over her ovaries. About two months after the x-ray treatment, a radical mastectomy was done. The pathologic report was as follows: "Sections of the mammary tumor area show much dense connective tissue, some acellular, other portions undergoing active fibrosis. There are several small ducts partly filled with neoplastic epithelial cells, other areas of small alveoli and still other portions showing infiltrating narrow strands of hyperchromatic cells. The lymph nodes show a fatty replacement with very little lymphoid structure but no evidence of neoplastic tissue." And now, 6 months after operation, there is no evidence of recurrence.

Case 3. Mrs. C. D. M., aged 47. When first seen by us June 5, 1935, this patient had a tumor in the breast about 1½ inches in diameter, several enlarged nodes in the axilla and above the clavicle. A biopsy on one of the nodes from above the clavicle was done and the pathologic report was "Metastatic adenocarcinoma,

grade 2, moderately radio resistant." Obviously this patient was inoperable. She was given a full cycle of x-ray therapy over the breast and ovaries. She has been examined many times since and, except for a slight pigmentation of the skin which resulted from the x-ray, I defy anyone to tell which breast the tumor was in. The nodes in the axilla and neck have also disappeared. She is alive and perfectly well today almost 2 years after the treatment, and has not been operated on.

Case 4. Mrs. J. G. M., aged 40. We first saw this patient in 1929, at which time she had carcinoma of the breast with involvement of the axilla. We did a radical mastectomy on her and followed it with the type of x-ray therapy that we were using at that time. She remained perfectly well for 6 years, then returned to us January 1935, with metastases in her humerus, pelvis, skull and probably other places. Her arm was useless and she had constant pain in her pelvis and back. Following the use of x-ray therapy all of the pain disappeared, the head of the humerus regenerated and she lived a happy comfortable life, engaging in all of her usual activities, for a period of 18 months. Within the past 6 months, other metastases have appeared and the old ones have recurred, and she has not responded to treatment. Even in this hopeless, far-advanced case, very satisfactory and worthwhile palliation was accomplished for a period of 18 months.

Conclusions

1. Modern x-ray therapy offers a major advance in the treatment of cancer of the breast.
2. Preoperative x-ray therapy is far superior to postoperative irradiation.
3. Advanced cancer of the breast and some of the so-called border-line operable cases will live longer and in more comfort with x-ray therapy than with operation.
4. A sterilizing dose of x-ray to the ovaries produces a regression of cancer of the breast and is a distinct aid in treatment.
5. In advanced cases of cancer with metastases, pain can usually be relieved and life prolonged in relative health and comfort by the administration of x-ray therapy.

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DISCUSSION ON PAPER OF DR. THOMAS HARROLD

Dr. L. P. Holmes (Augusta): I should like first to congratulate Dr. Harrold on his excellent paper, and to add that I think he is pioneering in this interesting and important field.

It is rather a queer coincidence that the perfection of the radical breast operation by Halsted and Myer was about contemporary with the discovery of the x-ray by Roentgen.

Of course, these surgeons at that time had no thought of the roentgen-ray ever playing any role in the cure of cancer until the early experimenters began to show definite skin changes, proving that the ray had a definite biologic effect.

The early apparatus was so poorly developed that little could be expected from therapy on the malignant tumors except the superficial ones, but as the machines were developed and the doses standardized it was found that a cellulicidal effect could be obtained beneath the skin. Even then the doses were given massively, at long intervals, injuring the skin and were frequently inadequate.

Henri Coutard of the Institute of Radium, University of Paris, has given us, up to the present time, the most satisfactory approach to the cure of cancer by x-ray.

His treatments are given daily over a long period of time and by this method the skin is preserved and a much larger depth dosage is allowed to reach the malignant tumor. The skin often showing a marked epithelitis but recovering promptly after the treatments. He has recently reported a very interesting study, "The Conception of Periodicity as a Possible Directing Factor in the Roentgentherapy of Cancer," stating that the cellulicidal effects on various body cells including certain carcinomas, are periodic.

The Year Book of Radiology, 1936, reports a critical analysis of published statistics of R. G. Hutchison (Glasgow), on radiation therapy in the treatment of carcinoma of the breast, in which they state: "It is to be expected that when radiation is applied not at random, of unknown quality and intensity and in unknown amount but in a scientific manner, it will surpass the results of any other method."

His table shows a higher percentage (3 years or more) of cures with x-ray, for early and late cases, than with any other method. His cures (5 years or more), for early and late cases were practically the same as for x-ray plus surgery.

Statistics have proved the advantage of castration before the menopause in cancer of the breast, as well as the marked relief of pain and prolongation of life in advanced cases with metastasis.

The x-ray treatment of carcinoma of the breast is not yet perfected but has certainly taken its rightful place in the present fight against this dread disease.

Dr. James J. Clark (Atlanta): It has been a great pleasure for me to listen to Dr. Harrold's excellent paper on x-ray treatment of carcinoma of the breast. For many years I have advocated the preoperative treatment of this type of case but I never believed the time would come when I would have the pleasure of

hearing a prominent surgeon advocate radiation in place of surgery, or before surgery was attempted.

In his opening paragraph Dr. Harrold states that caustic pastes and other relics of the Dark Ages are still used in this state in the treatment of cancer. This is understandable when we consider Dr. Paullin's statistics as brought out in his survey which showed the level of education in the group studied by his committee. It also shows the tremendous importance of work like Dr. J. L. Campbell's and his cancer committee, in their efforts to bring enlightenment on the subject of cancer to the people of Georgia.

Radical surgery has shown no improvement in results during the past fifteen or twenty years, this in spite of the many modifications in operative technic. We realize that the cases cured by surgery are, for the most part, the early cases who are treated before axillary metastases have developed. These cases may be cured by a simple mastectomy. It has, therefore, been necessary that treatment methods be improved. This has been done by earlier recognition of the disease and newer methods of treatment which, of course, includes radiation.

We all realize that in a patient who has axillary metastases, an advanced lesion is present and that the prognosis is extremely grave. A careful survey of recorded cases shows that only about 15 per cent of these patients are cured by surgery alone. The addition of the postoperative radiation has improved this percentage.

I believe in and have advocated for years, thorough preoperative radiation with sufficient time between the radiation and the operation to permit the tissues to respond.

Since the treatment as outlined by Coutard has been followed by leading radiologists of this country, a new medical history in the treatment of breast cancer is being written. We see, daily, large massive breast and axillary infiltrations regressing until at the end of two months it is often impossible to definitely palpate the tumor in the breast or the enlarged glands in the axilla. This method of treatment also includes in the field of therapy the mediastinal and cervical glands, the mediastinum having in the past been inaccessible to surgery. This method of treatment requires the daily administration of small doses of x-ray which is prolonged over a period of weeks until the tissues are completely saturated with x-ray. This results in the destruction of the malignant cells. Unfortunately, there is also damage to the skin and overlying tissues, and may produce considerable pain and discomfort, but later heals, leaving no unpleasant sequelae.

After several weeks, when the radiation reaction has subsided, surgical extirpation of the breast is indicated; however, it often happens that the complete sterilization of the cancer has occurred and that study of this breast tissue by a pathologist reveals no evidence of malignant cells, or if malignant cells are present, they are distorted, deformed and fibrosed.

In a recent case of my own at Emory University Hospital, biopsy of the breast tumor demonstrated adenocarcinoma. Thorough radiation was given as outlined above, and after operation three months later, the

pathologist could find no evidence of malignancy in the tissues excised.

The problem today is to have a real definition and understanding of what constitutes an inoperable case. At what stage does it become inoperable? Apparently, from experience of men in cancer centers, the breast is practically inoperable when definite metastases have developed, and it is in this type of case where radiation is showing its marked value as a therapeutic agent.

Dr. Harrold also discussed the value of the radiation menopause in women who have breast cancers. I believe this is a valuable procedure and is well worth doing as there is a definite relation between the growth of breast cancer and the menstrual cycle. However, a few years will be required before this method of treatment can be evaluated.

In closing I wish to bespeak for the radiologist the thoughtful consideration of their medical brethren, particularly when they observe the skin reactions which follow the Coutard type of therapy. They must realize that to accomplish the purpose of sterilization of cancer cells, some damage must be done to the overlying tissues; therefore, if the physician will consider that a cancer is being treated, he can help minimize the unpleasant temporary skin reactions. If these reactions should become permanent they may be taken care of by postoperative resection, and skin grafting, which is a low cost for the cure of cancer.

Dr. C. C. Harrold (Macon): One interesting thing about the case of the young woman 32 years old was that the x-ray treatment was given heavily and she wound up with a necrosis of the rib. I was talking to Dr. Ware about that and he said that happened once or twice with him with diffuse types of cases, but it happened a number of times. In this case, it finally cleared up, and the woman is apparently all right.

Another thing that Dr. Harrold mentioned was the discussion of the damage to the white cells and the red cells. I wish that he had gone into that a little more fully so as to have gotten the reaction of Dr. Holmes and Dr. Clark about it. He has been stopping his x-ray treatments whenever the white counts dropped down to 3000 or 3500. I know that there are places in America where the treatment goes right on, regardless of that, but we have felt that in our cases it would be wise to stop before we got well down into the danger group. I think the thing that he brought out about preoperative therapy in early cases, probably from the standpoint of final results, in a large group of cases, is the most important thing that he said. It is, of course, hard to make patients wait, when they realize that the whole thing is coming to them, the surgery and the x-ray, and it is hard to make the doctors who have these patients realize that it is important to give therapy first.

I believe in America within the next ten years we are going to find that it is a recognized method of treatment. And I wish to say this in closing: I have been interested in surgical work in the breast for many years, and I feel more encouraged today about breast surgery in cancer than I ever have, and it is because of the different method of treatment that we are using now.

Dr. J. L. Campbell (Atlanta): I am very glad indeed to have heard Dr. Harrold's paper. X-ray therapy is being developed rapidly and it is hard for one not actively engaged in this line of work to keep thoroughly abreast of the advances. The new 400,000-volt machine that is being used in some of our larger institutions bids fair to do much to aid or even supplant surgery in some cases. Of course, it is difficult to say just what the outcome will finally be.

Five years ago I believed that cancer of the breast, when diagnosed early, was easily curable, but I have had so many jolts that I feel we are about as helpless in these cases as in cancer elsewhere in the body. Indeed, I do not know what organ or part of the body I would select for a cancer—whether I would elect to have preoperative x-ray, postoperative treatment, or none at all. In a study made by Dr. R. B. Greenough in Boston the 5-year cures varied so little that it becomes a puzzle difficult to solve.

When patients of moderate means come to us with a lump in the breast, the problem is even harder because x-ray therapy is necessarily expensive. It takes time, and the diagnosis is still uncertain. I have seen long and expensive series of x-ray given in the belief that the tumor was malignant, only to find later that it was a cyst or an adenoma. Again I have done a radical operation under the impression that I was dealing with a malignancy, and have found a benign condition. Of course, in such cases the patient is lucky in not having a cancer.

If the punch biopsy ever becomes truly reliable we will know what to do; but at the present its most ardent advocates only claim that it is valuable when positive. We must remember that a negative report in an early case is of absolutely no value. The same is true of the much vaunted transillumination that we thought a few years ago was so valuable.

In advanced, rapidly growing cancers in young women, in women during pregnancy or lactation, or in older fat women, I believe x-ray alone offers a longer life expectancy than surgery or a combination of surgery and x-ray.

When we are able to standardize our work and all operators are willing to conform to that standard, more rapid advance can be made. Until that time we must study our individual cases and try to bring our best judgment to bear and do what seems wisest for that particular patient.

Dr. Thomas Harrold (Macon): I want to thank all the gentlemen for their generous discussion. It seems that we haven't anything to argue about on this particular subject.

I have a few slides which I should like to show which are not of great importance particularly to those who are already familiar with the treatment of cancer of the breast by this method.

(Slide) This woman is one of those that I reported in the paper who had quite a bulky tumor in the upper quadrant of the breast, with no glands in the axilla. She was given preoperative x-ray treatment. The picture on the right simply shows our technic in giving treatment to these large pendulous breasts. The tube

is turned bottom side up and the breast is cross-fired from below.

(Slide) There is a picture showing her arm over the x-ray tube, getting therapy through the axilla. The one on the right shows therapy above the clavicle into the glands there.

(Slide) This case is one which I think probably should not be operated on, although technically it would be possible to remove this breast and the gland. You can see the breast has quite a large tumor attached to the skin, and there were large glands in the axilla. This is the type of patient that all of us have operated on in the past, without any question, but I think we have gotten almost 100 per cent bad results in cases as far advanced as this one. Although she is operative chronically, I believe she will do better with x-ray alone.

(Slide) This is one of the inflammatory types of carcinomas of the breast which I think it is admitted should never be operated on. As a matter of fact, x-ray therapy does not do a great deal for these cases, but they are certainly better off treated with x-ray than with operation. If you operate on them you set them on fire.

(Slide) I hope to show the reaction that we get with this heavy dosage. This woman has had pre-operative x-ray treatment, and completed it about two weeks before this colored photograph was made. There is blistering of the skin, particularly in one area just above the nipple. There was also a marked inflammatory reaction in the skin of the whole area.

(Slide) The skin there is quite red. This was taken on the day that this patient completed her x-ray cycle and there is definite blistering in the axilla and marked erythema reaction in the skin of the whole area.

(Slide) This reaction usually gets worse for about ten days or two weeks after treatments are stopped. There you can see perhaps a little better the blistering in the axilla and the general redness of the entire area. That will subside in about three to four weeks.

AUGUST A. WERNER, GREY JONES, JOHN ROBERTS, G. O. BROUN, CHARLES H. NEILSON and NORMAN O. ROTHERMICH, St. Louis (*Journal A. M. A.*, Sept. 25, 1937), find that theelin in oil stimulates development of the sex-related structures of the human female, producing changes in the breasts, gross appearance of the vagina, with increased mucous secretion, and growth of the endometrium and vaginal mucosa in dosages as low as 5,000 international units. Definite changes in the vaginal smears were noted with dosages of theelin in oil as low as 10,000 international units. Vaginal smears would appear to be a less delicate index of theelin administration than uterine mucosal specimens. Relief of symptoms of castration was obtained with dosages as low as 5,000 international units, which is insufficient to produce the full follicular phase in the vaginal smears. This experiment proves that dosages of 5,000 international units of theelin in oil, when the element of time is considered, will mitigate or relieve the symptoms of castration but at the same time will stimulate development of the endometrium sufficiently to cause uterine bleeding when discontinued. Theelin in oil is much more effective than theelin in aqueous solution. When administered intramuscularly in the human being, smaller dosage and less frequent intervals of injection produce more rapid and more marked effect.

THE USE OF DRUGS IN THE TREATMENT OF PROPHYLAXIS OF MALARIA*

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Malaria is becoming increasingly important to the clinician in the sections where there is even the slightest incidence of the disease. Especially is this true of those concerned with its treatment in the states in this immediate vicinity, since 97 per cent of all cases of malaria in the United States occur in the southeastern section, which comprises only 13 states. Every physician in this zone is no doubt vaguely aware that the incidence of malaria is increasing. The following statistics give a more concrete idea of this rising menace: From 1931 to 1935 there has been an increase in the morbidity of malaria ranging from 24 per cent in Missouri and Arkansas to 140 per cent and 169 per cent in Louisiana and Mississippi.¹² Obviously, the greatest present need is some method of rapid and positive control, together with adequate curative therapy. It is the object of this paper to deal with the relative value of the present accepted means of supplying both of these needs. To consider all possibilities in this connection would, of course, be beyond the scope of the discussion; furthermore, in the discussion of the antimalarial methods, only those concerned with the use of drugs will be given attention. Naturally, all drugs could not be mentioned, so this report is confined to the two most prevalent drugs in use today i.e., atabrine and quinine.

The statement has been made to the effect that the ideal antimalarial should fulfill the following requirements: It should cause a prompt and complete alleviation of the febrile attack, should prevent relapse, and should be well tolerated and of low toxicity.² It is well to add that the drug must have a definite action on every kind and form of parasite since it is not possible, either clinically or microscopically, to determine the virulence of the strain, the clinical stage of the disease etc., as suggested in the Third General Report of the Malaria Commission on the Therapeutics of Malaria.¹⁶ Before any drug

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

could qualify on this basis long and well conducted field and clinical experiments and observations would be necessary. In this connection, it is surprising to see, in the medical profession, such unscientific and dogmatic deductions, and statements that have been made regarding experimental therapeutics in malaria. The above statement is not intended to include those valuable works which indicate the acme in application of scientific methods, but refers to the usually unpublished criticism and verbal propaganda which have been circulated regarding the use of the newest of the antimalarial drugs. In many cases, the drug under consideration has not been permitted to uphold its merits because of its use in combination with, or followed by, other drugs. While it is possible for two drugs, each used alone, to be effective and quite harmless, there is no indication that the combination of the two will be effective and non-toxic. Nor can the true value of a drug be determined when the experiments take place under controlled laboratory conditions rather than in the field working with a naturally infected population. In the interpretation of results the now accepted cyclic character of malaria morbidity must be taken into consideration.¹⁰ This may, to some extent, account for the decidedly contradictory reports from surveys conducted at different times. If an adequate control is not under observation at the same time, and in close proximity to the patients receiving treatment at the time that treatment is being given, no justifiable conclusions may be drawn.

In determining the comparative effectiveness of the two drugs, the first consideration should be the action of the drugs on the infecting organism. As in the case of the chemotherapy of all protozoa, the definite action of the drug is somewhat obscure. The present evidence does indicate, however, that the therapeutic effect of quinine is due to the stimulation of some natural antibody or to the formation of some decomposition product rather than to the direct action of the quinine on the parasites themselves.¹¹ Many interesting experiments were conducted before this deduction was made; Laveran observed soon after he discovered the parasite that the motility of the organism on a slide was arrested by 1:1000 dilutions of quinine. However,

the concentration of quinine in the blood of patients does not usually exceed 1:100,000. No great importance may be attached to the experiments, however, since it has been found that substances which have no antimalarial action have definitely inhibited the motility equally as well as quinine.¹⁷ Observations from studying the stained blood films after the ingestion of quinine indicated a marked degeneration of the cytoplasm of the plasmodium. Fragmentation and prevention of sporulation also follow the therapeutic dose.³ Since this action is not a direct one, it appears plausible that the parasites might be able to create a resistance to the drug. The supposed "quinine-fast" strain may result from just such an action. Thus, it is evident that to prevent sporulation, i.e., the formation of the schizont, a concentration of sufficient quinine must be maintained in the body. The exact fate of the parasite is not known. It is not reasonable, however, to believe that the parasites are killed, due to the short time which usually occurs between the completion of treatment and the relapse. The elimination of quinine from the body is very rapid. The excretion by the kidneys usually begins within half an hour after ingestion and is usually complete within 24 hours, although traces have been detected in the urine for 3 days or longer.¹³ Repeated experiments have shown that after intravenous injection the quinine is almost completely eliminated from the blood in 3 to 5 minutes. Probably the best demonstration of the rapidity of elimination was conducted by Hatcher and Gold⁶ who made estimations on specimens averaging about 0.25 per cent of the total blood taken from 12 patients who had received quinine by mouth and intramuscularly. The blood was obtained at intervals of 30 minutes in 7 cases and up to 2 days in others. Quinine could not be detected in any single specimen, but a trace was recovered from the combined extracts of all specimens. The 12 patients had received a total of 14,500 mg. It has been further demonstrated that from 90 to 93 per cent of the quinine is metabolized in the body without becoming concentrated in the blood;¹⁵ of the amount that is taken into the blood about three-fourths is in the plasma.

Up to the present time, due to the lack of

knowledge concerning the specific action of quinine in malaria infections, it has been impossible to determine the dosage and duration of treatment. Attempts to determine the dose required, on the assumption that the action is a direct one, were conducted by Bass, who found that in cultures of blood containing malaria plasmodia a concentration of 1:9000 was required to check the growth within 5 hours. This assumption was obviously not true because the concentration of quinine in the body is much lower than this, as has been previously indicated. Consequently, the only means of determining the mechanics of administering quinine, with the present information on the subject, is by the use of experimental doses varying in amount and continuing for various lengths of time. The results of such experiments have been shown in the recommendation of several methods of employing quinine. Probably the most universally accepted method of quinine therapy is that recommended by Bass¹ in the Report of the National Malaria Committee. For the acute attack, 10 grains of quinine sulphate are given by mouth three times a day for 3 or 4 days. Following this, 10 grains are given every night for a period of at least 8 weeks. Deeks⁴ has recommended somewhat larger doses at first and has reduced the total length of treatment to about 3 weeks. Several shorter methods have been tried with varying results. The most noteworthy of these recommends 15 grains of quinine daily for 4 days for benign tertian infections, and a somewhat longer period for the subtertian (estivoautumnal) infection. The Health Organization of the League of Nations, while they recognize the short method as being somewhat effective, recommend that in the benign tertian infection there should be given a minimum of 15 grains of quinine for at least 5 days, and call attention to the fact that it is the consensus of opinion that the longer methods are still more effective. It has been almost conclusively demonstrated that the length of treatment has no effect as to whether or not a relapse will occur.¹⁸ The Health Organization has been attacked for drawing conclusions from the patients treated under controlled laboratory conditions.¹⁶ The chief point of contention was the recommendation that in cases of subtertian malaria the treatment be delayed long enough to allow the patient to

create an alleged natural immunity. However, as was emphasized by William Fletcher, the report dealt with the subject "from the point of view of the persons who are in a position to obtain expert medical advice and efficient care rather than from the mass of the population of malarious countries."

Due to the evident direct action of the drug on the parasite, the malarial action of atabrine is better understood than that of quinine. The changes in the parasites following atabrine have been described by James,⁷ who gives the following information: "The pigment becomes aggregated into lumps and eventually disappears; the cytoplasm becomes thin and ragged and breaks up; the nuclear vacuole is distended; the chromatin becomes opened out and diffuse, till finally only a few lightly stained dots remain." On the basis of the direct action of atabrine on the parasite, it has been suggested that the number of parasites rather than the weight of the patient determine the dose.¹⁴ Obviously, this is not practical in routine treatment. Because of its direct action it has been recommended that a large dose of atabrine be given, at first, to produce the concentration necessary to kill the parasites. Just what concentration is required to definitely terminate a moderate, or severe infection is not known; however, the prescribed dose of 0.1 Gm. three times a day for 5 days is usually sufficient. In pernicious cases parenteral (intramuscular) administration is indicated, and it has been our experience that 0.4 Gm. in two injections is sufficient. In collapse I usually give 0.2 Gm. with 750 cc. of 7 per cent glucose intravenously.

The absorption and excretion of atabrine present a striking contrast to that of quinine. Atabrine is quickly absorbed by the small intestine and eliminated slowly by the kidneys and bile. Traces have been detected in the urine 56 days after completion of the prescribed course of treatment. In view of these facts it is evident that a concentration, sufficient to kill the parasites, could be maintained in the blood by replacing the slowly excreted drug. This would no doubt solve the prophylactic problem if it could be adequately demonstrated that atabrine has a definite action on the forms of the parasite injected by the mosquito.

To this point, only the action of the drugs

in relation to their antimalarial action and therapeutic dosage has been considered. The effect of these drugs on the human has brought forth much unwarranted controversy, and as much unjust adverse criticism. Conclusions regarding the toxic effect of both of these drugs have often been hastily made from a few isolated and none too well observed cases. In beginning this discussion of toxicity, it is well to enumerate the definite toxic action of the drugs themselves on the system. In the greater number of cases neither of the two drugs produces any permanent injury. The fact that quinine has a specific action on the spinal ganglion and nervous elements in the retina is well known. The ears are also involved and often mental confusion follows the use of quinine. At best, quinine involves a long and deliberate course of treatment and in many cases, to be effective, is almost cruel to the patient. On the other hand, the only toxicity which can be definitely attributed to atabrine is the slight and infrequent gastrointestinal disturbances which are sometimes observed after the ingestion of the drug. It is quite possible that this is explained by the partial absorption of the drug that takes place when cellulose is contained in the diet of the patient. Jarvis⁸ has recommended that the diet of a patient taking atabrine should remain cellulose free. Some individuals show a yellow discoloration after taking atabrine, which may be partially explained by the delayed beginning of excretion of the drug. Green⁵ has shown that it is most likely to occur in patients when the beginning of excretion is delayed longer than the fourth day after the beginning of treatment.

There have been many reports of the toxic effects of atabrine; but after close study of these case reports it has been found that, in many incidences, the toxicity can be more easily explained as due to malaria itself,⁹ or to the combination of atabrine with some other accepted antimalarial, usually quinine. No attempt is made to excuse atabrine of any toxic action; however, I do believe that in the majority of cases the toxicity is not due to the action of atabrine alone.

The changing of therapeutic methods is slow and it is quite natural for new forms of treatment to meet with opposition and even attack. The fact that complications which occur when treating a disease with a drug new

in its field, are attributed to the new drug is not characteristic of only atabrine's debut in the treatment of malaria. Further study should be made, however, to definitely determine whether the unexpected effects are due to the new drug or to some other variation of the usual treatment, or even if the effects observed are not sometimes characteristic of the disease itself. The many limitations of quinine are known to each physician who has had occasion to use it, but through the years of use he has been apt to accept it as the best method of treating malaria, which, indeed it was, until recent years. If an intensive study of the reports of the competent investigators does not furnish enough evidence to demonstrate the superiority of atabrine in treatment and prophylaxis, one needs only to try atabrine in a few cases where the infection has been demonstrated by laboratory methods, using this drug alone and not following it with any other which might act with the dye remaining in the circulation.

To stress the need for a true malaria prophylaxis before such a group would be entirely irrelevant. Our intimate association with the infection has vividly impressed such a need upon us. In indicating the best drug for prophylaxis I do not wish to imply that any other preventive measure is not worthy of consideration. By all means, such measures as screening and drainage should be exercised to the utmost. I do not believe, however, that antimosquito measures are in themselves sufficient to accomplish the end for which they are intended. The necessity for completely ridding the human of all parasites is essential and has been brought to our attention in numerous instances. In treatment, we should have a drug which would abort all forms of parasites; in prophylaxis, a drug which would kill the sporozoites as they are injected by the mosquito. In the first case, it is well known that quinine has nothing more than a slight inhibitory effect on the sexual forms, while atabrine has a definite action on all sexual forms except those of *Plasmodium falciparum* and, in this case, plasmochin has proved effective. Unfortunately, it has been impossible to demonstrate that any existing drug has a definite action on the forms of the parasite injected by the mosquito. It was formerly believed that quinine would kill the parasite as injected into man by the mo-

squito, but Yorke and MacFie¹⁹ have shown that this is not the case, since malarial infection is not prevented, although symptoms do not develop, indicating that there is possibly an inhibitory effect on the development of the schizonts. Since quinine is not retained for any great length of time, in most cases the active symptoms will develop as soon as the quinine is discontinued. In the use of atabrine, the dye remains in the blood plasma for a long period and exercises a direct effect on the parasite as long as it is in the circulation. The superiority of atabrine in prophylaxis is probably due to its direct action on the parasites which continues for the entire time that atabrine is in the body.

Without considering the active superiority of either of the two drugs, it is obvious that atabrine is the first drug that we have known that could possibly be used effectively in mass treatment and prophylaxis.⁵ It is equally as important that the curative dose of atabrine can be given without interfering with the working efficiency of a population. The ease and simplicity of administration is a factor which deserves consideration in individual as well as in mass treatment.

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DISCUSSION ON PAPER OF DR. ROY A. HILL

Dr. Alex R. Freeman (Albany): Dr. Hill has pointed out that in comparisons of therapeutic efficiency of malarial drugs, it is necessary that the drugs be tried out in the same section at the same time. In the conclusions of the Third General Report of the Malarial Commission, this was strongly brought out: i.e., before declaring that atabrine or quinine is superior for a given strain of malaria, it is necessary to qualify not only the strain, but the country in which it is occurring, and the

particular year. *P. Falciparum*, for example, may be highly virulent or drug resistant in one section and relatively harmless in another, and to only a slightly less extent may vary in the same locality in different years. We are all aware of the cyclic mortality rates of pneumonia, and we know the importance of controls established in the same places during the same epidemics. It is equally true in malaria.

In regard to length of time that quinine should be used following an acute attack of malaria, Dr. Hill has stated that it has been almost conclusively demonstrated that the length of treatment has no effect on whether a relapse will occur. The Malarial Commission recommended that when quinine is used, it should be given in a dose of 18 grains a day for five to seven days and stopped. Though this is a new idea in scientific circles, it is not at all new to our Negro and rural population, and fortunately enough they have as so often before, unwittingly hit upon the truth. Chills and fever and a bottle of Old Dr. Devine's Swamp Tonic and quite usually cure; and they don't take it for eight weeks either, but only until the fever stops; and further, along the lines recommended by the Malarial Commission, they usually start the quinine many hours and usually days after the fever begins. This idea of immunity has not been sufficiently stressed in malaria—there is a definite immunity that can be and is developed against malaria, and the surest way to PREVENT its development is by taking or prescribing large doses of quinine at the onset of malaria, whether fresh infestation or relapse. While moderate doses of quinine or atabrine early in a fresh infestation are indicated, cases of relapsing malaria should be allowed from 24 to 72 hours before either drug is started, and then be given small doses for a short period of time.

I was very glad to hear Dr. Hill's remarks in regard to lack of reliable evidence of toxicity from atabrine. I have given full doses of atabrine to more than 1,000 studied cases of malaria and I have never seen evidence of toxicity. I have seen three cases of acute mania in patients with a heavy malarial infestation and without fever, in whom atabrine would certainly have been blamed had it been given, and especially if the patient showed pigmentation. It happened, however, that in these cases no drug had been taken (possibly a little quinine); they were given atabrine, and both malaria and mania disappeared.

Finally, I would like to call attention once more to the concluding recommendations of the last Malarial Commission: In tertian malaria, quinine and atabrine are equally effective and NEITHER SHOULD BE GIVEN FOR LONGER THAN ONE WEEK. Relapses should be treated with smaller doses. Subtertian, tropical or malignant malaria, responds better to atabrine than to quinine; but where atabrine is not effective, quinine should be used. Full doses should be used again in relapse.

Dr. M. E. Winchester (Brunswick): I was very much interested in Dr. Hill's paper, as he is carrying out a piece of work I have been doing since 1934; that is, the use of one drug in a malaria control program in Southeast Georgia.

Dr. Hill mentioned the marked increase in malaria

since 1931. All of you are familiar with the increase in 1936, and I am glad to say that Glynn County, which of course is in the usual malaria belt, is one of the very few counties in Georgia that has shown a decrease in malaria, both morbidity and mortality, since 1934.

I wonder sometimes if some of the by-effects noted following the use of drugs may not be due to the disease itself. I have treated more than ten thousand cases of malaria with atabrine in the last five years, and have had some by-effect, but sometimes wonder if the medication is responsible. On the other hand, the slight gastric disturbances that occur in a few of the cases, as well as the slight discoloration that we have had soon clears up. Repeated examinations of the urine have failed to show bile or evidences of renal injury and we feel that continued administration of the drug causes no liver damage. The gastric disturbances usually last for only a few days.

I have carried a series of 800 individuals over a period of three years, using $\frac{3}{4}$ grain of atabrine each day, taken at bedtime each evening, for the prevention of malaria. In this series of cases not a single individual developed malaria, and this is the third continuous year that we have carried on the study. On the other hand, we have carried a control group in the same locality, and the infection rate runs as high as 60 per cent in this area.

If any county desires to adopt a practical malaria control program using atabrine, I do not say you can absolutely wipe out the disease but it can be controlled. I feel it is necessary to carry on hand in hand, the four best known methods: drainage, drug control, screening and oiling.

In closing I wish to say that with these methods, properly applied, we can hope for a marked reduction in the malaria incidence, and this disease will cease to be, as it is now, our major health problem.

I have enjoyed Dr. Hill's paper and look forward to further reports of his work.

Dr. A. D. Little (Thomasville): I should like to know what effect the heavy metals have on the malarial parasites?

Dr. Roy A. Hill (Thomasville): I wish to thank Dr. Winchester for the comprehensive discussion he has rendered. I sincerely regret that those scheduled to discuss this paper could not be present, and especially that Dr. McGehee was seriously injured in an automobile accident.

In answer to the question concerning the heavy metals, I wish to state that I have employed a few of the heavy metals experimentally. Arsenic and antimony were given particular attention. While I feel that probably both of these drugs have some inhibitory action on the malaria plasmodia, I do not consider their use in treatment justifiable. Doses large enough to be of any value toward alleviating the clinical symptoms would probably cause the patient to develop acute hepatitis. With safe and easy methods of administering the equally safe antimalarial drugs, I feel that it exhibits negligence on the part of the physician when any deviation is made to use a drug which might cause injury to the patient.

PRACTICE OF MEDICINE BY CORPORATIONS

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Atlanta

There is a growing tendency of corporations to encroach upon the fields of the professions. It will not be amiss for the medical profession to consider the legal right of a corporation to practice medicine.

Prior to statutory regulation any person who wished might practice medicine. No preliminary training was required. The earliest demand for regulation by the law-makers in England came from the physicians themselves, in order to obtain protection against competition of those who had no qualifications for the treatment of disease.

In this country, the first law regulating practice was adopted in New York in the latter part of the eighteenth century. Since then all of the states of the Union have adopted acts regulating the practice of medicine. None of the laws of the various states are identical in form, but their intent and purpose are the same. The regulatory acts in the various states prescribe the qualifications of an applicant for a license, create boards to conduct examinations and to issue licenses, empower the boards to suspend or revoke licenses for specified offenses, define the practice of medicine, and make it a penal offense for the unlicensed to practice.

In Georgia, an applicant for admission to a Georgia medical school must furnish evidence of a certain prescribed premedical college course. The Board of Medical Examiners has authority to pass upon the good standing and reputation of any medical college of this State. Any person wishing to obtain the right to practice medicine must make application to the Board of Medical Examiners and obtain from the Board a license to do so after having satisfied the Board of his good character and qualifications. The Board has authority to refuse to license or to revoke the license of any person who has been guilty of certain named offenses. The law defines the practice of medicine as "holding oneself out to the public as being engaged in the diagnosis or treatment of diseases, defects or injuries

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of human beings, or the suggestion, recommendation or prescribing of any form of treatment for the intended palliation, relief or cure of any physical, mental or functional ailment or defect of any person with the intention of receiving therefor either directly or indirectly any fee, gift or compensation whatsoever, or the maintenance of an office for the reception, examination and treatment of persons suffering from disease, defect or injury of body or mind, or attaching the title M. D., Oph., D., Dop., Surgeon, Dr. either alone or in connection with other words, or any other words or abbreviations to his name, indicating that such person is engaged in the treatment or diagnosis of diseases, defects or injuries of human beings."

The Georgia laws further provide that if any person shall hold himself out to the public as being engaged in the practice of medicine, without having a valid license to practice medicine under the laws of this State, he shall be deemed to be practicing medicine in violation of the law, and shall be guilty of a misdemeanor.

While there is no statute in Georgia which says that a corporation cannot practice medicine, it is apparent that a corporation cannot meet the requirements necessary to obtain a license in Georgia, and that therefore a corporation cannot legally practice medicine in Georgia. In fact, the practice by a corporation of medicine, or any of the learned professions for that matter, is abhorrent not only to the welfare of the members of the professions, but to the welfare of the public. The purpose of the law making it illegal to practice medicine under the name of a corporation is to protect the public from ignorance, unskillfulness, unscrupulousness, deception and fraud. To that end, the law requires that the relation of the medical practitioner to his patients must be personal. The courts have severely condemned the cloaking of a physician's professional identity under the name of an unlicensed corporation as "pretentious, and impostures of charlatanry." Such evasion is contrary to public policy. An honorable professional man's good name is his most valuable asset, not to be bartered away. As one court said, "the practice of medicine involves personal skill, presupposes a period of novitiate, intensive preparation, due examina-

tion, and admission, and that the licentiate's sheepskin is solely his own. The public has a right to believe that these things are true, and that the physician's talents require no subterfuge in names or otherwise. To permit it would be to allow a species of misrepresentation and fraud upon the public."

Since a corporation itself cannot obtain a license and cannot legally practice medicine, can a corporation hold itself out to the public as being engaged in the practice of medicine through the instrumentality of licensed individual employees? In my opinion, in Georgia, neither a corporation nor any other unlicensed person or entity may engage in the practice of medicine through licensed employees. The courts of many states in applying statutes similar to the Georgia statute regulating the practice of medicine have held that a corporation was practicing medicine in violation of law where it owned a clinic with officers, wherein the treatment of disease was engaged in solely by licensed physicians employed by the corporation which received the fees charged the patients. One court said: "It is impossible to conceive of any impersonal entity 'judging the nature, character, and symptoms of the disease' or 'determining the proper remedy,' or giving or prescribing the application of the remedy of the disease. Members of the corporation or persons in its employ might do these things, but the corporation itself is incapable to do them. The qualification of a medical practitioner is personal to himself. The intention of the law is that one who undertakes to judge the nature of a disease, or to determine the proper remedy therefor, or to apply the remedy, must have certain personal qualifications and if he does these things without having complied with the law, he is subject to its penalties."

Many incorporated hospitals have licensed physicians as their officers. The hospital may, of course, lawfully undertake to furnish its patients hospital facilities, but it cannot lawfully undertake to furnish its patients hospital facilities together with medical services. The hospital's officers who are licensed physicians may of course furnish medical services to patients in the hospital, but the patient looks to the individual physician to furnish the medical services, and the individual physician and not the hospital looks to the patient

for compensation. The law is clear that a corporation itself cannot legally practice medicine in Georgia, and that it is a violation of the law for a corporation to receive compensation for the practice of medicine through licensed physicians or unlicensed persons in its employ.

In my opinion the law which forbids a corporation from invading the field of the individual, licensed physician is founded, not only on common sense, but on a sound public policy, and serves the purpose of maintaining the close personal relationship between the physician and the patient, which is necessary for the preservation of the ethics and ideals of the profession and for the betterment of the public welfare.

HEALTH TROPHY FOR PARENT-TEACHER ASSOCIATION

As an incentive to improve the health of parents and teachers and children the MEDICAL ASSOCIATION OF GEORGIA has given a Health Trophy to the Georgia Congress of Parents and Teachers for them to award it to that district which has done the best health work during the year.

The award is made on a basis of points which are allotted to five health subjects, namely:

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| 1. Diphtheria: School record or private physician's certificate of having toxoid or certificate of negative Schick test (children) | 35 points |
| 2. Typhoid: School record or private physician's certificate showing that three inoculations of typhoid vaccine have been given within the past three years (children) | 15 points |
| 3. Dental Corrections: School record or private dentist's certificate of corrections made (children) | 10 points |
| 4. Tuberculin Test (children) | 15 points |
| 5. Physical examinations for parents and teachers the current year on a form published by the MEDICAL ASSOCIATION OF GEORGIA | 25 points |
| Total | 100 points |

A greater safeguard cannot be thrown around children than for their parents and teachers to have good health. A yearly examination or check up by the family physician on a form furnished by the MEDICAL ASSOCIATION OF GEORGIA may be the means of warding off serious trouble. These forms provide a grading of each physical condition the total based on 100 points, with the deductions noted in the margin of the form, so that it will be easy for the examined and the physician to notice any variation on a re-examination, and what a great satisfaction when the examination proves to be 100 per cent perfect.

The physician will use Health Examination blanks furnished him by his county medical society. Each individual examined receives and keeps his blank properly filled out by the physician. In addition the physician will give to the examined a certificate, signed by him which is then turned over to the nurse of the school or the health chairman of the association. The following year the examined will return to the family physician with the form for a comparative examination.

The certificate is attached to the form and is torn off at the perforated line.

The physicians have agreed to charge only a reasonable fee for this complete health examination and hope that many will take advantage of this offer to have a thorough check up of themselves.

THEODORE TOEPEL, M.D.

PERICARDITIS

ARTHUR M. SHIPLEY, Baltimore (*Journal A. M. A.*, Sept. 25, 1937), limits his discussion to the various types of pericarditis, as there is little agreement in belief and practice and it is apparent that many cases of this condition, in its different phases, are still overlooked. Operations for pericarditis are reported from only a relatively small number of clinics. Cooperation between the different services is urgently needed. The patients with cardiac disease that may come within the scope of surgery should be studied by the internist, roentgenologist and surgeon working in unison. In the clinics from which progress is reported this cooperation is evident. In coronary thrombosis, pericarditis with effusion is sometimes present. It may be confined to the area of infarction, and the amount of effusion is usually small. Occasionally, however, the quantity of fluid present is considerable and may cause uncertainty as to diagnosis, especially if thrombosis and infarction with effusion occur during the course of some infectious process, such as pneumonia, furunculosis, osteomyelitis or peripheral infections seen during the course of uncontrolled diabetes. The operative results of pericardiectomy for constricting pericarditis warrant a much wider use of this therapeutic agent. The operative approach in pericardiectomy is being standardized and simplified.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

OCTOBER, 1937

MEDICAL ETHICS

From time to time lay writers inveigh against medical ethics. One writer has gone so far as to state that physicians' relations with each other are the chief reasons for the stir for socialized medicine. Needless to say, this opinion is absurd. Medicine is the only profession in the history of the world which has been governed continuously by a written code of conduct.

Medical ethics is primarily in the interest of the patient and was written for his protection. Should the ill person, his family or friends, become dissatisfied with the practice of the physician in attendance there is no compulsion to continue with his services. There is nothing in medical ethics to prevent another physician taking over the patient after relations have been severed with the first physician. The code of ethics also provides for the conduct of physicians in consultation, all for the proper care of the patient.

Physicians do not have patients. People sometimes employ the same physician for many years, but they are not his patients until he is summoned to attend them when they are ill or injured, and he may be dismissed at their pleasure.

The present agitation for socialized medicine has many sinister roots, many of which are not in the interest of the public. Physicians as a group are interested in the welfare of patients and not in the political aspirations of a few people, some of whom wish to revolutionize a profession whose code of ethics began before the time of Christ. Medicine is not a trade—it is a profession close to the people, perhaps closer than any other—and the public will do well to keep their medical problems away from the politically-minded reformers. The principles of medical ethics are indeed builded on a sound foundation.

GEO. A. TRAYLOR, M.D., *President.*

OUR DUTY TOWARD OBEYING LAWS

The laws of our land were founded upon codes of conduct which have been gradually evolved during the history of the human race, and customs which have been found from time to time to meet the needs of the peoples. Naturally, changes have been made as occasion demanded, but emendations and additions were based upon premises deemed advantageous, and to meet the requirements of the majority. In our republic the rights and privileges of those who opposed changes have been protected; this is a distinguishing mark of our democracy.

Our profession has produced a few statesmen, and we are looked upon by our people as being above-the-average in intelligence. It should be our pride to merit this opinion and so strive that it shall be maintained.

Within the past fifteen years there has been laxness in the observance of laws by men and women in almost every walk of life. Very little thinking is required to envisage what this will lead to if persisted in. We should exert our influence to remedy this situation, at least among those with whom we come in contact; and our opportunities are as varied and numerous as those to whom we are called to minister. We should make every effort to enhance the lofty opinion which the public holds of us, and at the same time render a distinct service to the State to which we owe so much. Man may be "an unsocial animal," but as society is at present organized it would be difficult for him to live without contacts with his fellows. Your child's conduct and future are greatly influenced by your neighbors and their children, and it is our duty to all children to see that they are law-abiding.

Our association — THE MEDICAL ASSOCIATION OF GEORGIA — was founded upon good principles; we have a constitution, by-laws and code of ethics, and we should take pride in living within the circle they encompass. They were not written by your present officers, but are the result of many years' study; and are believed to be in the best interests of those we serve as well as ourselves. When a physician contemplates entering upon some phase of medical practice and is uncertain as to how it will be received by his colleagues, it would be well for him to read these documents and Hippocrates'

oath; and then hold self-communion for several days. If, after such meditation, he is still in doubt as to what course to take, he will profit to consult the officers and censors of his county medical society whose services are available at all times, and are usually in the interest of all concerned.

GEO. A. TRAYLOR, M.D., *President.*

SENATOR LEWIS' PROPOSAL

Senator James Hamilton Lewis of Illinois addressed the House of Delegates of the *American Medical Association* in Atlantic City last June. The press carried parts of his address but it would be well for every physician to read it. In justice to Senator Lewis it may be said that his address, if carefully read, and it cannot be understood unless so read, carried a thinly veiled warning that he intended to introduce some such resolution in Congress as was brought forward on July 28, 1937, in which he proposes: "To provide medical aid for the needy and the stricken with illnesses who are unable because of poverty to provide treatment and hospitalization; also, to establish all licensed practitioners as civil officers of the national government." The latter would apply to every physician whether he wishes it or not. The physician summoned to make a call on an indigent person would be bound to answer the call and, if he deemed hospitalization advisable, could have his patient admitted to a hospital, and the hospital authorities must not refuse the patient admission. Refusal to render service by either physician or hospital would be punishable by a fine not exceeding one thousand dollars (\$1,000) or imprisonment for not more than three months or both. Like provision is made for the punishment of physicians or hospitals making exorbitant charges (exorbitant charges are not defined) or for charging the patient anything additional to the amount of the bill rendered to the federal government. Rules, regulations and administrative enforcement governing the Senator's proposal are to be formulated by the Social Security Board.

The provisions of this bill would take from all states all medical and hospital care of their medically indigent and concentrate authority in a central bureau in Washington, and it would erase state lines so far as this

aspect of social relations is concerned. There are probably some physicians who would welcome the enactment of the Senator's resolution but there are others who think that it is inadvisable in the interest of the public as well as our profession; that its enactment will be a long step forward toward abolishing the freedom which physicians and every one else now enjoy, and that the practice heretofore followed of delegating to the state the care of certain specified diseases and health problems is less radical, more sanely thought out and more democratic. As examples of the latter in our own state may be mentioned care of the insane, feeble-minded, indigent tuberculous, and public health.

Now that our senators and congressmen are at home cogitating some of the happenings of the year it would be well for the physicians of Georgia to acquaint them with their views on this far-reaching and revolutionary proposal. Individual physicians cannot accomplish much when dealing with such a problem, but organized medicine can, and the situation brings home to each and every practitioner of medicine the need for concerted action. Furthermore, it stresses the need for education of the public for the majority of the masses is unacquainted with what is best for their health and medical welfare. They look to our profession for guidance and leadership but are too likely to listen to the most vociferous without stopping to analyze the ultimate implications of their utterances. Your Association is already carrying forward a campaign of education through its Public Relations Bureau. Would you like to have a part in this work?

Health and illnesses have suddenly been made issues by the political and socially-minded. Lack of proper food and clothing seem of little import, yet it would be difficult for a federally employed physician to give "adequate medical care" to the naked and hungry. First we must educate people to accept medical care once it is offered them. Lack of bread and its consequences sent Louis XVI and Marie Antoinette to the guillotine; and France before the Revolution never supported the load of tax-eaters that is now borne by the tax-burdened citizens of the United States.

GEO. A. TRAYLOR, M.D., *President.*

WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, La-Grange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

DISTRICT AND COUNTY
ACTIVITIES*First District*

The summer meeting was held at Hotel DeSoto, Savannah, July 21st. Mrs. Lehman W. Williams, Savannah, presided.

Mrs. Ralph H. Chaney, Augusta, State president, spoke on the "Aims and Objectives of the Auxiliary."

Mrs. H. B. Ritchie talked on the "Work of the Women's Field Army of the American Society for the Control of Cancer."

Dr. Grady Coker, Canton, president-elect of the Association, spoke on "Social Welfare and Existing Medical Conditions in Our Counties Today."

Dr. S. Ross Brown, with the State Department of Public Health, spoke on "Venereal Diseases and Public Health."

Dr. Wm. R. Dancy, Savannah, spoke on "Federal Medicine."

Officers elected for 1937-39 were: Mrs. A. J. Mooney, Statesboro, president; Mrs. Chas. Usher, Savannah, vice president; Mrs. Harry M. Kandel, Savannah, secretary-treasurer; Mrs. J. Wallace Daniel, Claxton, parliamentarian.

Sixth District

The Auxiliary to the Sixth District Medical Society met on June 30th in the Nurses' Home at the Milledgeville State Hospital. Mrs. J. L. King, Macon, district manager, presided.

Mrs. J. L. Garrard, Milledgeville, made the Address of Welcome; Mrs. W. W. Chrisman, Macon, responded.

Mrs. Ralph H. Chaney, Augusta, president, spoke on the "Aims and Plans of the Auxiliary."

Other speakers on the program were: Dr. Geo. A. Traylor, Augusta, president of the Association; Dr. Edgar D. Shanks, Atlanta, secretary-treasurer; Dr. Thos. L. Ross, Macon, talked on "Heart Diseases."

Mrs. H. D. Allen, Jr., Milledgeville, was appointed chairman of the Nominating Committee to serve with Mrs. H. C. Atkinson, Macon, and Mrs. E. B. Claxton, Dublin.

Chairmen of other committees were: Mrs. Y. H. Yarbrough, Milledgeville, Health Education; Mrs. Richard Binion, Macon, Romance in Medicine; Mrs. L. P. Longino, Milledgeville, Legislation.

Entertainments: barbecue luncheon at the Milledgeville State Hospital; afternoon tea at home of Dr. and Mrs. John W. Oden.

Barrow County

The Auxiliary to the Barrow County Medical Society held its quarterly meeting recently at the home of Mrs. S. T. Ross, Winder. Mrs. Ernest Harris presided.

Officers elected were: Mrs. W. T. Randolph, president; Mrs. S. T. Ross, vice president; Mrs. Ernest Harris, recording secretary; Mrs. Alex Russell, corresponding secretary; Mrs. C. B. Almand, treasurer; Mrs. W. L. Mathews, historian. All officers reside at Winder.

Mrs. W. T. Randolph reported a health talk which she gave before the Bethlehem Parent-Teacher Association, and the showing of a health film at the Winder Theater; she recited "Florence Nightingale, a Pioneer Woman in Medicine."

Mrs. Ernest Harris gave a sketch of "Life of Elizabeth Blackwell, First Woman to Receive an M.D. Degree."

Baldwin County

Mrs. Chas. H. Richardson, Macon, was elected president of the Woman's Auxiliary to the Baldwin County Medical Society; Mrs. R. E. Evans, Milledgeville, vice president; Mrs. Sam A. Anderson, Milledgeville, treasurer; Mrs. L. P. Longino, Milledgeville, secretary.

Richmond County

A recent meeting of the Auxiliary to the Richmond County Medical Society was held at the Lodge of Mrs. Joseph Akerman with Mrs. Sadie Y. Thompson as hostess.

Mrs. Alice Stewart described the pediatric ward at the University Hospital and spoke of its necessity and usefulness.

The members were interested in the report

given on the annual state convention.

Picnic lunch and swimming were enjoyed after the business meeting.

Fulton County

The Auxiliary to the Fulton County Medical Society held its summer meeting at "Pine Hollow," the country home of Dr. and Mrs. R. E. Newberry. The meeting was featured as a picnic.

Officers elected were: Mrs. Stephen T. Brown, president; Mrs. B. L. Shackleford, president-elect; Mrs. H. Cliff Sauls, first vice president; Mrs. Eustace A. Allen, second vice president; Mrs. Crawford F. Barnett, recording secretary; Mrs. Jas. L. Pittman, corresponding secretary; Mrs. Jas. P. Hanner, treasurer; Mrs. Joseph Yampolsky, historian; Mrs. Marion T. Benson, auditor; Mrs. James N. Brawner, parliamentarian. All officers reside in Atlanta.

RANDOLPH COUNTY MEDICAL SOCIETY

Dr. W. G. Elliott, Cuthbert, secretary-treasurer of the Randolph County Medical Society, remitted dues for 1938 on September 27th for every member of the Society, except the honorary members who do not pay dues. Dr. G. Y. Moore, former secretary-treasurer of the Society until his death on December 24, 1933, and president of the Association, 1930-31, remitted dues in September for the subsequent year continuously each year over the period of time for which any record has been kept of an honor roll of the constituent societies of the Association. Therefore, Randolph County has been "No. 1" on the honor roll continuously since one has been published.

NEWS ITEMS

DR. R. R. ROBERTS has formally opened his new clinic on Perry Street in Lawrenceville, equipped with laboratory, x-ray, wards, reception room, office, kitchen, operating room and living quarters.

DR. CRAWFORD F. BARNETT announced the termination of his association after September 1st. His office will remain at 207 Doctors' Building, 478 Peachtree Street, N. E., Atlanta.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, September 2nd. Dr. T. Schley Gatewood read a paper on *Therapeutics of Dysmenorrhea*.

DR. HOWARD R. CARY, a graduate of the University of Georgia School of Medicine, served as an intern at the Georgia Baptist Hospital, Atlanta, has accepted a position on the staff of the Baldwin Memorial Hospital, Milledgeville.

DR. WILLIAM R. CROWE announces his association in practice with Dr. Hal. M. Davison and Dr. Mason I. Lowance, Suite 207 Doctors' Building, 478 Peachtree Street, N. E., Atlanta.

DR. F. A. BRINK, formerly of Blackshear and more

recently of Jacksonville, Florida, announces his removal to Homerville.

THE SOUTHEASTERN BRANCH SOCIETY of the American Urological Association will hold its fourth annual meeting in Birmingham, Alabama, November 5-6. The Tutwiler Hotel will be headquarters. Titles of papers on the scientific program are: *Clinical Data Concerning Prostatic Resection*, by Dr. Gershom J. Thompson, Mayo Clinic, Rochester, Minn.; *Surgery of the Human Ureter*, Dr. Nelse F. Ockerblad, Kansas City, Mo.; *Sulphanilamide in the Treatment of Genito-Urinary Infections*, Dr. J. A. C. Colston, Johns Hopkins Hospital, Baltimore, Md.; *Hormonal Treatment of Benign Prostatic Hypertrophy*, Dr. Henry W. E. Walther and Dr. Robert M. Willoughby, New Orleans, La.; *Urology in Children*, Dr. Owsley Grant, Louisville, Ky.; *Extravasation from the Lower Urinary Tract*, Dr. Jas. J. Ravenel, Charleston, S. C.; *Cystopic Removal of Large Ureteral Calculi*, Dr. Edwin P. Alyea, Duke University, Durham, N. C.; *Report of Two Interesting Cases with Lantern Slides*, Dr. Milton M. Coplan, Miami, Fla.; *Address*, Dr. Clyde LeRoy Deming, New Haven Hospital, New Haven, Conn. (secretary of the American Urological Association).

DR. C. F. GRIFFITH, DR. W. C. MILES and DR. T. G. SMAHA announce the opening of The Clinic at 127 East Solomon Street, Griffin. Each physician has a suite of rooms and The Clinic is equipped with laboratory and x-ray, also emergency operating room.

DR. B. H. MINCHEW announces an association with Dr. Braswell E. Collins for the treatment of diseases of the eye, ear, nose and throat at Waycross.

THE WARE COUNTY HOSPITAL, located at Waycross, held its quarterly clinic on September 15th. Cases presented were: 1. *Removal of Massive Keloid from Upper Eyelid*; 2. *Papilloma of Larynx*; 3. *Functional Hypertrophy of False Vocal Chords*; 4. *Demonstration of Need for Removal of Foci Preliminary to Cataract Operation*, by Dr. B. H. Minchew, Dr. B. E. Collins and Dr. Leo Smith; *Showed Plates of Unerrupted Teeth—Comment Concerning Surgical Removal*, Dr. Paul McGee; *Plastic Restoration—Presentation of Case of Hypospadias Pseudohermaphroditism*, Dr. H. A. Seaman, Waycross; *Review of Plastic Surgery—Presentation of Cases*, Dr. Kenneth McCullough, Waycross; *Urological Clinic*, Dr. W. F. Reavis and Dr. Lovick W. Pierce, Waycross; *Comment on the Use of Evipal in Surgery*, Dr. T. J. Ferrell, Waycross; *Pediatric Clinic, Methods of Diagnosis of Sick Infants, Comments on Infant Feeding*, Dr. Luther W. Holloway and Dr. C. M. Stephens, Waycross. The attendants were entertained at a banquet at the Ware Hotel.

DR. SAMUEL J. SINKOE announces the removal of his offices to Suite 1015 Candler Building, Atlanta. Practice will be limited to urology.

THE NINTH DISTRICT MEDICAL SOCIETY met at Alto on September 15th. Titles of papers on the program were: *Diagnosis of Pulmonary Tuberculosis with X-Ray* by Dr. Fred C. Welchel, Alto; discussed by Dr. R. K. Brown. *Danger of Pneumothorax with X-Ray*,

Dr. Horace E. Crow, Alto; discussed by Dr. C. D. Whelchel, Gainesville. Address, Dr. Geo. A. Traylor, Augusta, president of the Association. *Recent Medicine Trend*, Dr. Grady N. Coker, Canton, president-elect of the Association; discussed by Dr. Clarence L. Ayers, Toccoa. Barbecued luncheon was served.

THE STEPHENS COUNTY HOSPITAL at Toccoa was formally opened on September 20th.

THE SOUTHWEST GEORGIA PUBLIC HEALTH ASSOCIATION met at Valdosta on September 9th. Dr. M. E. Groover, Quitman, president, presided.

THE LAURENS COUNTY MEDICAL SOCIETY met in the office of Dr. O. H. Cheek, Dublin, on September 7th.

THE SOUTHERN PSYCHIATRIC ASSOCIATION held its annual clinic at the Gunter Hotel, San Antonio, Texas, on October 8-9. Dr. D. Henry Poer, Atlanta, read a paper entitled *Psychiatric Work in New York Institutions*; Dr. Newdigate M. Owensby, Atlanta, *Sanitary in Psychiatry*. Dr. Owensby is secretary of the Association.

THE THOMAS COUNTY MEDICAL SOCIETY held its regular meeting at the Archbold Memorial Hospital, Thomasville, September 15th. Dr. James R. Paulk, Moultrie, read a paper on *Bronchoscopy*; Dr. Herbert Redling, Thomas county commissioner of health, *The Care of Children from a Public Health Standpoint*; Dr. Rudolph Bell, Thomasville, spoke on *Prostatic Abscesses* with particular reference to transurethral treatment. Dinner was served the members and guests. The next meeting will be held in Thomasville on December 15th.

DR. J. LAMONT HENRY announces the opening of offices in Suite 1101 Doctors' Building, 478 Peachtree Street, N. E., Atlanta. Practice will be limited to internal medicine.

DR. GEO. M. ANDERSON, director of the Calhoun county health unit, spoke before a meeting of the Edison Lions Club on September 14th.

DR. I. W. IRVIN, Albany, was the recipient of a handsome silver service given by the Dawson Kiwanis Club as a token of appreciation for his work in behalf of less-fortunate children in Dawson and Terrell county.

THE MEDICAL ARTS ASSOCIATION, organized by and composed of the physicians of Pelham, celebrated its fourth anniversary on September 2nd. The doctors and their wives were present. The program consisted of music, short addresses, readings and a banquet.

DR. V. L. DARBY, formerly of Vidalia, has moved to Ludowici and will continue the practice of internal medicine.

DR. J. R. S. MAYS, former surgeon for District B, C. C. C. at the Station Hospital, Fort McPherson, has accepted an appointment to the staff of the Milledgeville State Hospital at Milledgeville.

DR. M. E. WINCHESTER, Brunswick, Glynn county

commissioner of health, spoke before a meeting of the Rotary Club, September 3rd, on the *Importance of Syphilis Clinics*.

THE GEORGIA PEDIATRIC SOCIETY will hold its annual scientific meeting in Atlanta, Thursday, December 9th. Guest speakers will include Dr. Ralph S. Muckenfuss, New York City, director of Department of Health, Bureau of Laboratories; Dr. Priscilla White, Boston, Mass., attending physician, Deaconess Hospital; Dr. Joseph Brennemann, Chicago, Ill., professor of pediatrics at the University of Chicago and chief of staff of the Children's Memorial Hospital.

DR. AND MRS. HENRY R. SLACK, LaGrange, celebrated their Golden Wedding anniversary at their home on September 14, 1937. All of their children and grandchildren were present. Their children are: Dr. Henry R. Slack, Jr., graduate of Johns Hopkins University School of Medicine, Baltimore, Md.; Searcy B. Slack, Decatur, graduate of Harvard University, Boston, Mass.; Mrs. Ruth Slack Smith, graduated with M.A. degree from Columbia University, New York, is now assistant dean for women at Duke University, Durham, N. C.; Mrs. S. D. Hooker, A.B. degree from Agnes Scott College, Decatur, resides at Patterson, N. J. Dr. and Mrs. Slack have eight grandchildren, three boys and five girls. More than 200 friends were at the reception and buffet supper; among them were: Dr. and Mrs. Jas. N. Brawner, Atlanta; Dr. and Mrs. Jno. B. Fitts, Atlanta, and many members of the Troup County Medical Society, of which Dr. Slack is a life member. He was the first president of the Georgia Chapter of the Johns Hopkins Alumni Association. With a wonderful health record, Dr. Slack has not lost a day from his practice on account of illness in more than 34 years.

THE SEVENTH DISTRICT MEDICAL SOCIETY held its regular meeting at Rome on September 29th. Titles of scientific papers on the program were: *Staphylococcus Septicemia; Treatment by Bacteriophage*, Dr. Warren Gilbert, Rome; discussed by Dr. R. C. Maddox, Rome, and Dr. William B. Quillian, Cartersville. *Use and Demonstration of Fracture Appliances*, Dr. J. H. Mull, Rome; discussed by Dr. Trammell Starr, Dalton, and Dr. W. D. Hall, Calhoun. Address, Dr. Geo. A. Traylor, Augusta, president of the Association. *Indications, Contraindications, and Comparative Evaluation of Injection Treatment and Operative Methods in the Treatment of Hemorrhoids*, Dr. Marion C. Pruitt, Atlanta; discussed by Dr. J. T. McCall, Rome, and Dr. W. Mayes Gober, Marietta. *Collapse Therapy in Pulmonary Tuberculosis*, Dr. D. L. Wood, Dalton; discussed by Dr. William Harbin, Jr., Rome, and Dr. W. H. Perkinson, Marietta. *Public Health Significance of Typhoid Fever*, Dr. C. D. Bowdoin, Atlanta; discussed by Dr. B. V. Elmore, Rome, and Dr. Chas. W. Folsom, LaFayette.

DR. T. C. KERAMIDAS announces the opening of his office at 109 Sixth Street, N. W., Winter Haven, Florida, for the practice of general medicine and surgery.

THE FULTON COUNTY MEDICAL SOCIETY held a called meeting at the Academy of Medicine, Atlanta,

September 30th. to consider the report of the Committee on Postgraduate Medical Assembly.

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on September 29th. Dr. H. J. Goodwin, Douglas, read a paper entitled, *The Treatment of Septicemia*. The next meeting of the Society will be held on October 27th. Dr. T. H. Clark and Dr. J. G. Crovatt, both of Douglas, will read papers. Physicians of adjoining counties attend the meetings of the Coffee County Medical Society which shows the interest manifested.

THE STAFF MEETING of Emory University Hospital was held on October 4th. Dr. Joe Boland gave report on *Clinics in Europe*. Dr. Alton V. Hallum reported a case, *Neuromyelitis Optica*; discussed by Dr. Grady E. Clay and Dr. Ed F. Fincher. Dr. L. W. Grove, *Esophageal Diverticulum*. Dr. M. K. Bailey, *Extravasation of Urine*; discussed by Dr. Earl Floyd and Dr. Jas. L. Pittman.

THE GEORGIA UROLOGICAL ASSOCIATION held its annual scientific session at the Dempsey Hotel, Macon, October 7th. Titles of papers on the scientific program were: *Unusual Urological Conditions*, Dr. James L. Estes, Tampa, Florida; *Lymphogranuloma Inguinale*, J. Ullman Reaves, Mobile, Alabama; *Cancer of the Prostate with Early Metastasis—Case Report*, Dr. W. L. Champion and Dr. Major F. Fowler, Atlanta; *Crossed Ectopia of the Kidney—Case Report*, Dr. Wallace L. Bazemore and Dr. Willard R. Golsan, Macon. Dutch luncheon was served at the Dempsey Hotel. The afternoon was devoted to golf and other recreation. Officers of the Association are: Dr. Earl Floyd, Atlanta, president; Dr. Willis P. Jordan, Columbus, president-elect; Dr. W. E. Upchurch, Atlanta, secretary-treasurer.

OBITUARY

Dr. James Henry Downey, Gainesville; member; Emory University School of Medicine, Emory University, 1887; aged 73; died at a private hospital in Atlanta on August 28, 1937. He was a native of Laurens, South Carolina. Dr. Downey had practiced medicine in Gainesville for twenty-five years, established the Downey Hospital, and bore an excellent reputation as a surgeon. He took a prominent part in the fraternal, social and religious activities of his community. A memorial infirmary will be erected at Brenau College in Gainesville in honor of Dr. Downey. He was known by thousands of Brenau graduates as a friend and doctor. Dr. Downey was a member of the Hall County Medical Society, Southern Medical Association, American College of Surgeons, American Medical Association, Masonic Lodge, Shrine, and Baptist church; one time president of the Gainesville Rotary Club. Surviving him are his widow, one brother, Dr. Carroll Wm. Downey, Tallapoosa, Ga.; two sisters, Mrs. E. F. Babb, Laurens, S. C., and Mrs. Lidia Watkins, Spartanburg, S. C. Funeral services were conducted from the residence, 29 Academy Street, Gainesville, by Rev. H. C. Hinshelwood, rector of Grace Episcopal church. Interment was in Alta Vista ceme-

tery. Members of the Ninth District Medical Society and Rotary Club formed an honorary escort.

Dr. Virgil Francis Dinsmore, Tifton; member; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1900; aged 62; died at his home after a long illness on August 22, 1937. He was born in Milton county. Dr. Dinsmore moved to Tifton in 1912 and had been in the active practice of medicine until he retired on account of ill health. He served for a number of terms on the board of county commissioners with a commendable record. Dr. Dinsmore was a member of the Tift County Medical Society, Woodmen of the World, Masons and a faithful member of the Baptist church. Surviving him are his widow, one son, Wilton Dinsmore, Atlanta; two daughters, Mrs. H. B. McCrea, Thomasville, and Mrs. R. M. Kennon, Tifton. Funeral services were conducted from the Tifton Baptist church by Rev. M. P. Webb and Dr. F. O. Mixon. Burial was in the Tifton cemetery.

Dr. Henry Prentiss Derry, Macon; member; University of Georgia School of Medicine, Augusta, 1888; aged 74; died at his home after a long illness on August 30, 1937. He was born and reared in Augusta, moved to Macon immediately after he received his degree in medicine, and practiced there until forced to retire on account of declining health. He was one of Macon's best known physicians and limited his practice to pediatrics and obstetrics. For many years Dr. Derry was physician for the Appleton Church Home, Mount de Sales Academy, the Sisters of St. Peter and Saint Stanislaus Colleges and on the staff of Oglethorpe Private Infirmary. He was a member of the Macon Medical Society of Bibb County, Southern Medical Association, American Medical Association, and St. Paul's Episcopal church. He is survived by his widow, one daughter; three sons, Wallace T. Derry and H. P. Derry, Macon; and Charles H. Derry, Mazatlan, Mexico. Rev. Randolph Claiborne conducted the funeral services from St. Paul's Episcopal church. Burial was in Rose Hill cemetery.

Dr. Sigo Ehrlich, Bainbridge; member; Vanderbilt University School of Medicine, Nashville, Tenn., 1915; aged 49; died in a hospital at Thomasville after a long illness. He was born and reared in Bainbridge and received his early literary education there, studied for two years at Georgia School of Technology, Atlanta; then practiced pharmacy in Louisiana and Arkansas for several years before he began study at Vanderbilt. He immediately began practice in his home city and county after he graduated in medicine. During the World War, he served with the U. S. Coast Artillery in France. Dr. Ehrlich was a member of the American Legion and at one time post commander, Masonic Lodge, Decatur-Seminole Counties Medical Society, Southern Medical Association and American Medical Association. He was charitable and a good citizen. Rabbi E. A. Kandau conducted the funeral services. Burial was in Oak City cemetery. Members of the American Legion were pallbearers; members of the Decatur-Seminole Counties Medical Society and physicians from adjoining counties were honorary pallbearers.

Dr. John F. Lacewell, Dalton; member; Emory University School of Medicine, Emory University, 1886; aged 80; died after an illness of several years' duration at his home on August 19, 1937. He was born and reared in Bradley county, Tennessee. After he graduated in medicine, he began practice at Dalton, Whitfield county, and continued in active practice there for almost fifty years. Most of the people over several counties knew him as a loyal and faithful practitioner, answered calls day and night for the humble and wealthy alike. Surviving him are one son, Zeek T. Lacewell; one daughter, Mrs. Rayma B. Combee. Rev. J. W. Dooley, Chatsworth, and Rev. W. E. Roberts, Dalton, conducted the funeral services at Grove Level. Members of the Whitfield County Medical Society were honorary pallbearers.

Dr. Archer Avary, Atlanta; member; Southern Medical College, Atlanta, 1880; aged 90; died at the Soldiers' Home on September 12, 1937. When young he enlisted as a volunteer in the Confederate Army during the War Between the States; his first service was with the Tenth Georgia Cavalry and later with Cobb's Legion in Hampton's Army. After he graduated in medicine, he spent two years, 1883-84, in Germany and Austria taking postgraduate study. Dr. Avary until he retired about fifteen years ago, led an active and most useful life. His work merited the approval of his clientele and he was held in high esteem by many acquaintances. Dr. Avary served as commander of Camp No. 159 of the United Confederate Veterans and was a member of the Masonic Lodge. Surviving him are his son, Dr. Arch Avary, Jr., Ellaville; two brothers, Dr. James C. Avary and Robert Lee Avary, both of Atlanta. Bishop Warren A. Candler and Dr. Edward G. Mackay conducted the funeral services from the Peachtree Chapel. Burial was in the city cemetery at Decatur.

Dr. Henry Grady Atherton, Jasper; member; Emory University School of Medicine, Emory University, 1890; aged 47; died suddenly of heart disease at his home on September 4, 1937. He was born, reared and an inhabitant of Pickens county during his whole life. Dr. Atherton limited his practice to pediatrics, was prominent in the civic, political and religious affairs of Pickens county. At the time of his death he was chairman of the board of trustees of the Pickens County High School, mayor of Jasper, president of the Jasper Exchange Club; member of the Cherokee County Medical Society, Ninth District Medical Society, Free and Accepted Masons, Royal Arch Masons, Scottish Rite Masons, Shrine and the Jasper Methodist church. Other positions held were: Member of the city council of Jasper, president of the local chapter of the National Exchange Club, chairman of the Committee on Christian Education of the Methodist Episcopal church. Surviving him are his widow, one daughter, Miss Helen Atherton; two sons, Harry and James Atherton. Rev. D. S. Patterson conducted the funeral services from the Jasper Methodist church. Interment was in Jasper cemetery.

Dr. Robert William Bryant, Moultrie; Emory University School of Medicine, Emory University, 1895;

aged 67; died suddenly at his home on September 19, 1937. He was reared in Meriwether county and practiced medicine there for a number of years and removed to Moultrie twenty-one years ago. Dr. Bryant operated a number of farms and was interested in manufacturing farm implements. He was a good citizen and a member of the Methodist church. Surviving him are his widow, two daughters, Misses Mariam and Pauline Bryant; two sons, Robert and John Bryant, all of Moultrie. Funeral services were conducted from Salem church at Chipley and interment was in the churchyard.

BOOK REVIEWS

Clinical Allergy: Manifestations, Diagnosis, and Treatment. By Albert H. Rowe, M.S., M.D.; Lecturer in Medicine at the University of California Medical School, San Francisco, California; Chief of the Clinic for Allergic Diseases of the Alameda County Health Center, Oakland, California; President of the Association for the Study of Allergy, 1927-28. 812 pages. Lea and Febiger, Philadelphia. 1937. Price, \$8.50.

This book must not be confused with Rowe's former book on food allergy. It is not a limited book, but all inclusive, taking up all forms of allergy, their relation to each other, diagnosis and treatment. The book is especially well arranged to be of value to any physician practicing allergy, either a beginner or one who is already familiar with allergy. The physician who wishes a book on allergy for reference will find it valuable.

Instructions for diagnosis are given in detail. There are approximately fifty pages on the use of elimination or trial diets and thirty pages on the preparation of special diets for different kinds of patients who are suffering from allergy.

The book contains all the latest developments in allergy, with references to the articles in which these were reported. It is especially valuable for the content of the bibliography, which requires eighty pages.

HAL M. DAVISON, M.D.

DR. J. R. GARNER, Atlanta, chief surgeon, Atlanta and West Point Railroad Company, The Western Railway of Alabama and Georgia Railroad, was a speaker on the program of the National Safety Congress and Exposition, Kansas City, Missouri, October 11-15. He spoke on *Fatigue in Its Relation to Accident Prevention*.

The Southern Medical Association will hold its next annual meeting in the Municipal Auditorium, New Orleans, La., November 30th through December 3rd. The Roosevelt Hotel will be headquarters.

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THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., November, 1937

Number 11

SYMPOSIUM ON TUBERCULOSIS

THE TUBERCULOSIS SITUATION IN THE STATE WITH REFERENCE TO THE STATE SANATORIUM*

D. T. RANKIN, M.D.

Alto

In a paper dealing with the State Tuberculosis Sanatorium in reference to the tuberculosis problem in the State, it is only right that a brief history of the Institution be given.

In 1911, funds were appropriated by the Legislature for a Sanatorium for tuberculous patients to be built in Banks County near Alto, and in 1913, the Institution was opened for incipient and moderately advanced cases. The buildings comprised one for the more acutely sick and 8 pavilions for the ambulant and semi-ambulant. The equipment was poor as measured by present day standards. There was no x-ray and no surgery was done. The treatment was rest, good food and fresh air. But all can bear witness as to the excellent results obtained. As time went on, it was found that more space was necessary and a tract of land was purchased just across the county line in Habersham, and the present main building holding 168 patients was erected and opened in 1927. This was equipped with x-ray, laboratory and operating rooms. The Children's Building was given to the State by the Masons of Georgia in 1930, and provided 72 beds for childhood tuberculosis. The old Sanatorium was turned over to the negroes, giving them 87 beds. And in 1932 Thomas County built and deeded to the State a brick cottage with room for 16 beds. This gives a total capacity of 343 beds.

However, the number of applications has steadily continued to increase so that today we

find ourselves in the same position as before—the application list increasing at the rate of about 260 a year above the number that can be treated. Today, our waiting list numbers 1,059, and this undoubtedly is only a small part of the total number in the State suffering from the disease.

Because this is a State institution certain forms have to be observed in making application and certain information must be furnished. For the protection of the nurses and other patients, we must know whether a patient is or is not syphilitic. For the same reason we must have a history of epilepsy or mental disease, past or present. For your protection and the protection of your other tuberculous patients we must have a history of the actual condition of the applicant and must have a recent x-ray of his chest.

As stated before the Sanatorium is open to minimal and moderately advanced cases. But this rule has always been broadly interpreted to mean those cases having a reasonable chance for improvement or recovery. It would be much easier to accept all who applied. It would save taking the responsibility for making unpleasant decisions and would actually save the physicians at the Institution a great deal of work. We would soon have at least half our beds filled with hopeless cases for whom we could do nothing, and, in the meantime, many of the ones who could be helped would progress to a hopeless state while waiting to be admitted. I wish to state at this point that the offer or ability to pay has absolutely no influence either as to the time of admission or the treatment after being admitted.

During the past two years we have averaged 305 patients in the Sanatorium, the Children's Building seldom being more than half full. During this time, we have treated 1,455 patients, have made 7,768 roentgenograms, 4,697 fluoroscopic examinations and

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

3,560 consultation examinations. We have given pneumothorax 8,211 times, performed 321 phrenicotomies, 30 pneumolyses, 5 apicolyses and 22 thoracoplasties. And our laboratory with one technician has examined 18,828 specimens. Of the 1,150 patients discharged during this period 14 per cent were arrested or apparently arrested, 6 per cent quiescent, 32 per cent improved, 12 per cent unimproved, 6 per cent died and 26.5 per cent were non-tuberculous. I would like to explain the item of improved. According to the ruling of the National Tuberculosis Association, we cannot give better than improved to any case with a pneumothorax because the lung cannot be seen, no matter how symptom-free the patient may be. The cavity may be closed, the sputum negative, the patient afebrile, symptom-free, gaining weight and feeling in the best of health, but improved is the best we can do for him. The length of stay averages from 6 to 9 months and the patient is sent home when his cavity is closed, his sputum negative and he is trained to where he can carry on his cure and can protect those with whom he comes in contact or in some cases when we find that there is nothing more we can do for him.

But the change comes on his return home. Many are in very straightened circumstances. Numbers frankly state that they have no money to pay for pneumothorax refills or to obtain the proper food. Many are practically forced to get out and find some work to keep from absolute privation, and this is especially true of men with families. Some will not keep up their cure from innate perversity. Many go back to homes where the whole family must sleep in one room. And the children in many cases return to the source of infection from which they contracted the disease.

For every case treated in the Sanatorium 10 are walking our streets and spreading the infection. A great deal is being done to prevent this. The State Department of Health with its traveling clinic is endeavoring to find all the tuberculous cases in the State and especially the early ones. They are trying to educate the public to make them tuberculosis conscious. Some of the counties have established sanatoriums and others have built portable shacks so that the patients may at least

be isolated. The State Tuberculosis Society is running a sanatorium, is conducting a program of education, and is helping furnish money for treatment to needy patients. The State Sanatorium is rendering cases sputum-negative and is training them how to live so as not to be a menace to those with whom they come in contact. But too many unnecessary cases are developing. In other words, although much work has been and is being done in the way of education most of the results show not in prevention but in improvement and arrests of active cases. There is no way to force a suspected case to be examined or a known case to be treated.

We require vaccination against smallpox, diphtheria and typhoid fever in our schools. We quarantine in cases of smallpox, diphtheria and other contagious diseases. Yet these illnesses last a comparatively short time and as a rule leave little or no sequelae. We isolate for leprosy which is admittedly only mildly contagious. If a case of typhoid fever develops in one of our counties the County and State Boards of Health begin at once to hunt out and eliminate the source of the infection. But for the disease that is far more contagious than leprosy, that kills nearly as many as typhoid fever, that takes years, not weeks, to recover from and even if arrested almost inevitably leaves the patient crippled in so far as leading a normal, active, energetic life is concerned—we leave it strictly up to the pleasure and intelligence, or lack of it, of the patient himself as to what precautions, if any, he will take for the protection of his fellow man, or whether he will take treatment or not, and few appear to care, and little if anything is done about it.

Before much headway can be made to cut down the morbidity, some plan must be worked out whereby the open, active cases can be isolated for so long a time as they are liable to spread the disease. All cases should be registered and required to appear for periodic examinations to be certain that they have not re-opened. Places should be provided for treatment, and all active cases should be compelled to take treatment. We will then have gone back to the source of the infection and not until then will we make any real headway in the control of this disease.

DIAGNOSIS OF PULMONARY TUBERCULOSIS*

F. C. WHELCHER, M.D.

Alto

Within the past few years there has come about a reversal in the relative difficulty in diagnosing and treating pulmonary tuberculosis. Formerly the diagnosis was considered difficult and the treatment certainly was simple, while now in the vast majority of cases the diagnosis is easy but the proper management and treatment has become extremely complicated.

A few factors in regard to tuberculosis should always be kept in mind. It must be remembered that any person, regardless of age, resistance, or general condition of health will have the disease if a sufficient number of tubercle bacilli enter the body. Therefore, the history of more than casual contact with an open case is of vital importance in leading one to suspect the presence of tuberculosis. Every person who has had intimate and prolonged contact should have a chest examination regardless of the presence or absence of symptoms, because they are usually slight and often entirely absent in early tuberculosis.

Also the diagnosis must be established or eliminated in those who have more or less chronic local symptoms referable to the respiratory tract. There are exceptions, but usually general symptoms do not occur in tuberculosis unless local ones are also present. The local symptoms most commonly encountered are cough, expectoration, hemoptysis, pleurisy, and laryngeal irritation; the general symptoms most often found are malaise, anorexia, loss of weight and strength, lack of endurance, indigestion, and fever. Of course, all of the foregoing are also symptoms of many other diseases and not all appear in every case of tuberculosis. Together with other data symptoms must be given considerable weight but no symptom or group of symptoms is pathognomonic. Dry pleurisies not accompanied by acute infections, must be looked upon with utmost suspicion as nearly all are tuberculous. The same is true of pleurisies with effusion and unless otherwise accounted for should be so regarded.

The physical signs that may be elicited are so well known that little need be said about them. By far the most important is the presence of moderately coarse post-tussive rales, and when found in the upper third of the lung are nearly always due to tuberculosis. If heard at the bases they may be of no pathologic significance. However, in minimal lesions, rales, as well as all other signs, are often entirely absent.

The more frequent use of the x-ray has demonstrated beyond all doubt the futility of attempting to diagnose and define small tuberculous areas by means of decreased expansion, supraclavicular depressions, slight impairment of percussion note, prolonged expiration, granular breathing, and by palpation. These methods and signs are valuable in their places, but practically are useless in establishing a diagnosis of minimal tuberculosis, or in demonstrating the absence of minimal lesions. Physical signs are also most unreliable in revealing the exact extent and character of more advanced disease.

A number of factors have been responsible for the more satisfactory diagnosis of tuberculosis, but unquestionably the x-ray has been the most important. The number of minimal cases that can be diagnosed without its aid is almost negligible, and no other methods of examination will give so accurate a knowledge of more advanced disease. To be of value, thoracic roentgenograms must be technically satisfactory as attempts to interpret poor films will lead to many serious errors. The next essential is that one be thoroughly familiar with the shadows cast by normal structures. This cannot be emphasized too much since there is a wide variation in shadows produced by normal chests. This is especially true of the region in and near the hilum and of the descending trunks. The interpreter should be very sure of his ground when stating that these shadows are abnormal. Also because of the normal variations in linear markings, a diagnosis made on slight peribronchial infiltration alone is not justified. It is necessary also that one have a clear conception of the various types and characteristics of infiltrations caused by different pulmonary diseases.

Adult tuberculosis generally begins in the upper third of the lung and is seen on the roentgenogram as soft mottled shadows in the apex, or as a small dense area of infiltra-

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

tion below the clavicle. The moderately and far advanced lesions present such a variety of pathological shadows that a knowledge of the characteristics of all stages can be gained only by the examination of many films. Often on one x-ray of the chest may be seen the shadows of mottling, calcification, fibrosis, consolidation, and cavitation. Somewhat similar shadows are produced by diseases other than tuberculosis, but as a rule, if due consideration is given to the size, consistency, uniformity and distribution, certain essential characteristics will be found which will reveal the true nature of the process.

The laboratory furnishes the only pathognomonic sign of tuberculosis and that is a positive sputum. Because of the possibilities of error, acid-fast bacilli should be demonstrated more than once, and a negative sputum should be examined repeatedly. It should be remembered that patients who expectorate muco-purulent material which is repeatedly negative for tubercle bacilli must be suspected of having some non-tuberculous disease. Animal inoculation with the suspected material is advisable at times. It has been about 55 years since Koch discovered and proved that tubercle bacilli cause tuberculosis, but too often a sufficiently diligent search for the organisms is not made.

The tuberculin skin test has been found to be of much value in arriving at correct conclusions in regard to the exact nature of pulmonary pathology. It is indispensable in diagnosing childhood type tuberculosis and also very valuable in doubtful adult cases as a surprisingly large number will be found to be negative. This is especially true of the rural population, and a negative skin test, when the few exceptions are remembered, places an almost insurmountable burden of proof for a positive diagnosis on the history, symptoms, signs, and x-ray.

The diagnosis of childhood or first infection type tuberculosis is so entirely different from that of the adult that separate consideration is necessary. In suspecting the disease in children the history of exposure is by far the most important factor. The state of nutrition and the general health are usually entirely normal. Frequently there are no symptoms whatever that would indicate the presence of tuberculosis. If such symptoms as chronic cough, expectoration, fever, loss of

weight and strength are present it nearly always means that tuberculosis is not the causative factor. These symptoms occurring in a child may be the result of a hopelessly advanced adult type lesion, but in the vast majority of instances are caused by bronchiectasis or lung abscess.

The most common errors made in interpreting roentgenograms of the chests of children result from attributing broad and blurred mediastinal shadows to tuberculosis; this is insufficient evidence and nearly always is due to cardiac motion; also by interpreting all densities in the hilum as calcification. Practically all chest films show small round or oval dense areas in the hilum, most of which are due to blood vessels struck axially by the rays and are entirely normal. However, a positive diagnosis of childhood type tuberculosis can be made with great assurance of correctness by a careful consideration of the history, by the elimination of other pulmonary conditions, and by obtaining a positive skin test and a characteristic roentgenogram. A diagnosis of childhood tuberculosis is not justified unless both a positive skin test and positive x-ray findings are present.

Time permits only a brief mention of a few of the many conditions that may simulate tuberculosis. Of these bronchiectasis is the most common and it often produces every sign and symptom of tuberculosis except a positive sputum. The onset of symptoms can generally be traced back to an attack of pneumonia, measles, whooping cough, scarlet fever or sinusitis. The bronchi of the lower portion of the lungs are most often involved. The disease can readily be differentiated from tuberculosis by the history, x-ray, negative sputum and the instillation of an opaque iodized oil.

Lung abscess also rarely presents difficulties in differentiation. Ordinarily there is a history of pneumonia, tonsillectomy, or an operation on some part of the upper respiratory tract a short time before the sudden severe pulmonary symptoms occur. Also the possibilities of foreign bodies should be considered.

Fungus infections of the lungs present a picture somewhat like that of tuberculosis and the diagnosis can be made only by finding the organisms in the sputum. It may be mentioned here that care should be exercised in

making a diagnosis of bronchiectasis and fungus infections, as iodized oil and the administration of iodides are definitely dangerous in tuberculosis.

The prolonged inhalation of irritant dust produces x-ray evidence not unlike that of miliary tuberculosis, but the symptoms, and especially the occupational history, are significant.

Primary new growths of the lungs may be confusing, but serial x-ray films and bronchoscopic examination will reveal the non-tuberculous nature of the process.

Subacute non-tuberculous pulmonary conditions occur fairly frequently after "colds" and influenza. The pathology is generally in the region of the descending bronchi. Again, the history, location, sputum examination, skin test, and x-ray appearance will make the diagnosis clear.

In conclusion, emphasis should be placed on the following: In suspecting tuberculosis the opportunity for infection and symptoms are most important; the adult type of tuberculosis has a strong predilection for the apices, and moderately coarse rales in these areas are almost pathognomonic; thorough study of the sputum should never be neglected, and satisfactory roentgenograms are indispensable. The final diagnosis is made only after a correlation and proper appraisal of all possible findings.

In presenting a preliminary report of their experiences with the hypoglycemic treatment of the schizophrenic reactions, CHARLES A. RYMER, JOHN D. BENJAMIN and FRANKLIN G. EBAUGH, Denver (*Journal A. M. A.*, Oct. 16, 1937), discuss the methods of study employed as well as the actual results obtained in their series of seven completed cases. They feel that the results of the hypoglycemic treatment of schizophrenia to date (excellent results were obtained in five of their seven patients) are highly encouraging, although a long period of time will be necessary before a definite opinion can be given. Apart from its therapeutic value, the method offers an unusual opportunity for clinical and laboratory research. The most promising approach at the present time appears to them to lie in the qualitative study of remissions; not only whether the insulin treatment increases the number of remissions but also whether these are in any way better than or different from spontaneous remissions.

The American Board of Obstetrics and Gynecology will hold its next examinations in the United States and Canada on February 5, 1938. Applications for admittance to these examinations must be on an official form which may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pa.

SOME MEDICAL ASPECTS OF PULMONARY TUBERCULOSIS*

H. E. CROW, M.D.

Alto

Too many people are still dying of this disease, which is both preventable and curable. The lack of early case findings accounts in part for this situation. Another and a very weighty factor is the failure of the patient to remain on the cure, the old fashioned curing regimen, long enough. There is no one thing more important in the treatment of pulmonary tuberculosis than a follow-up of the patient's progress. By far the most important part of this follow-up treatment is a periodic x-ray examination. This should be done at least annually even in those cases pronounced cured. The vital necessity of twenty-four hour bed rest should be emphasized and re-emphasized to the patient until the x-ray film shows the disappearance of all evidence of cavitation and most all the evidence of softening.

For years all of us have acknowledged the value of bed rest, but how long it should be carried out has been given less thought. No one can safely say at the outset of treatment how long bed rest will be necessary in any case, except, of course, the one in which the disease is strictly unilateral and a satisfactory pneumothorax is expected. Nevertheless the necessary period of bed rest usually runs several months or years longer than is commonly practiced. About the only criterion is the x-ray.

As a matter pertaining to progress let it be remembered we have gone a long way toward restoring the patient's health when a previously positive sputum becomes negative. Many a person has been diagnosed as tuberculous and told he has only a small amount of trouble, and that he will snap out of it in two or three months if he will only take it easy. With but few exceptions no tuberculous patient can bring his disease, even a minimal amount, under safe control or cure within a few months.

However, remarkable advances have been made of late years in the treatment of pulmonary tuberculosis. For example, one of

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

the most outstanding differences in modern treatment as compared with a few years ago is the fact that now certain types of far advanced cases can safely return to their former occupation as soon as minimal ones.

Just a few years ago the treatment of tuberculosis was a more or less fixed regimen applicable alike to most all cases. The regimen essentially consisted of rest, adequate diet and so-called fresh air. These fundamental principles remain indispensable, but they are by no means our sole dependence. Many additional methods have been found to be effective in lessening the gravity and duration of illness. Modern treatment is more selective. By selective we mean the type and duration of treatment depends entirely upon the proper classification of disease, also upon the age, color and financial circumstances.

For the sake of review let us recall that pulmonary tuberculosis is classified as to childhood type, minimal, moderately advanced and far advanced.

We shall outline the beginning treatment usually advised for the various classifications on admission to the Sanatorium. Approximately 90 per cent of the childhood type cases on the Children's Service show, on admission, the lesions already apparently healed. The remaining 10 per cent, or, the infiltrative type are made bed patients until the x-ray shows complete clearing of the infiltrative area. Some clear remarkably fast, requiring only a few months. The majority require about two years. The outlook, however, in all these cases is favorable.

Going from the childhood type to the adult type our usual beginning treatment is as follows: All are placed under Sanatorium regimen—this being varied according to the classification and general condition. As to the minimal case artificial pneumothorax is advised for all those in the 'teen age or early 20's, both white and colored. In fact, it is recommended for the negro at most all ages. Furthermore, it is advised for all white patients who are, because of financial circumstances, unable to remain away from work long enough to cure under a more conservative type treatment. For those over 25 years of age and who are financially able to take the cure indefinitely on bed rest a phrenicotomy may be advised.

As to the moderately advanced case it depends upon whether or not the disease is unilateral, or nearly so, or equally distributed through both lungs. The strictly unilateral and those whose disease is limited mostly to one lung are unhesitatingly given artificial pneumothorax. The bilateral case equally involved on both sides is usually placed under Sanatorium routine. X-ray examinations are made about every three months to determine the progress of each lung. If at any time during this period of observation and bed rest it is determined one lung is progressing favorably, while the other is not, pneumothorax may be indicated.

What has been said of the moderately advanced case may essentially be said of the far advanced case. But just here we beg to drop a word of warning. It is very easy to become overenthusiastic and too radical in collapse therapy of any type. For example some of the far advanced, bilateral cases when first discovered are sick persons. They are weak, febrile and undernourished. If they have not had a chance at absolute, twenty-four hour bed rest, adequate diet and nursing care we like to see them have this for at least a few months before pneumothorax or any other type of collapse is resorted to. Many of them will cool off, gain weight and strength in a few months. In our opinion this type of patient will ultimately receive more benefit from pneumothorax if first treated conservatively. If, however, the patient is a hemorrhage case and if one can feel reasonably certain by x-ray evidence the side from which the hemorrhage is coming pneumothorax should be attempted at once. We recall that these are some of the beginning plans of treatment. As the patient is followed the form of treatment may necessarily be changed. Pulmonary tuberculosis is not so simple to treat and is still harder to cure.

Some erroneous opinions have been formed with regard to tolerance and cure of tuberculosis. These opinions have arisen largely because of an error in diagnosis. If a diagnosis is made in error of tuberculosis and the patient responds favorably and in a short time to a change of climate or a moderate amount of rest, etc., the wrong impression may be formed in that the disease is not so difficult to overcome.

These statements are based on the fact that

we see, not rarely, such patients whose x-ray film fails to show any evidence of tuberculosis, either past or present; their sputum, if any, is repeatedly negative for tubercle bacilli and their skin is negative to O. T.—to as much as from 2 to 5 mg. It is true many early cases of tuberculosis get well and leave no evidence of previous disease on the x-ray film, but we believe the majority of them will remain positive to O.T.

As to tuberculous complications, particularly tuberculous laryngitis and enterocolitis, the first step toward a successful treatment is rendering the sputum negative. Briefly said all forms of complications are usually benefited by sun or ultraviolet light and a high intake of vitamins.

Since artificial pneumothorax is considered as medical treatment by most physicians we wish to call attention to a few problems arising during the management of pneumothorax. If pneumothorax is looked upon as a form of treatment in which a given amount of air is injected at regular intervals it is improperly managed and is very likely to be unsuccessful. But, first let us remind ourselves that the purpose of pneumothorax is to collapse the lung to whatever degree is indicated, if possible, and maintain that collapse continuously and uniformly a sufficient length of time for the lung to heal. There are only two kinds of pneumothoraces, viz., satisfactory and unsatisfactory. The length of time the lung should be kept collapsed varies with the extent and character of the lesion. It may range from two to five years. To do satisfactory work one must have access to both a fluoroscopic and x-ray machine. Even with the aid of these it is possible to lose a perfectly satisfactory pneumothorax. We refer particularly to a type of obliterative pneumothorax that may develop following a pleural effusion. We are referring, too, to the pneumothorax in which there are no pleural adhesions at the outset. But following the formation of fluid the base of the lung becomes obscured by the fluid shadow and it may gradually expand sufficiently to become adhered to the parietal pleura. This process goes on unseen by the physician. Once the base is anchored more adhesions form, up along the chest wall toward the apex, drawing the lung out, so to speak, to the chest wall. Such a process will finally obliterate

the pneumothorax space. We had the sad experience of losing what was a satisfactory pneumothorax in that manner.

This type of obliterative pneumothorax is fairly easy to prevent. Either keep the patient practically free of fluid, so the base can be watched by the fluoroscope, or, if most of the fluid is not kept removed the base should be watched by fluoroscopy or making a film with the patient in the reclining position, and lying on the opposite side to the pneumothorax. This position allows the fluid to level off parallel with the axis of the body, thus enabling the location of the base, provided the space is not too nearly filled with fluid.

As soon as this kind of obliterative pneumothorax is found developing a high intrapleural pressure should be maintained, if tolerated, and either sterile mineral oil or 5 per cent gomenol in oil should be instilled into the pleural space. The oil will help to prevent or at least retard the formation of additional adhesions.

Another problem that may be the cause of failure of establishing a satisfactory pneumothorax is a flexible mediastinum. Flexibility varies with patients. In some we see marked hernias of the mediastinal pleura and yet there is only a moderate amount of collapse and the intrapleural pressure is even zero or negative. Such conditions usually exist in patients who have not had a pleurisy with effusion. Therefore, an effusion is the thing needed to produce a rigid mediastinum. By instilling into the pleural space some mild irritant such as 5 per cent gomenol in oil or hexylresorcinol a pleuritis with effusion will usually develop. Then after the acute stage of pleurisy and effusion are over the mediastinum is much less flexible and will permit a higher pressure and better collapse of the lung.

Since sulfanilamide or its derivatives contain the benzene ring, it is possible that it may cause damage to the hematopoietic system. S. E. KOHN, Milwaukee (*Journal A. M. A.*, Sept. 25, 1937), reports a case of anemia with acute hemolysis and hemoglobinuria following the use of sulfanilamide. It would appear that certain individuals have some predisposition to react to this dye. Obviously with the great number of patients who have received the drug in the past year and with the few reports of toxic reactions, most persons are not unfavorably affected. If sulfanilamide is to be used, one must constantly keep in mind, however, that it is not entirely without some danger.

INDICATIONS FOR THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS†*

DANIEL C. ELKIN, M.D.
C. W. STRICKLER, JR., M.D.
Atlanta

According to the National Tuberculosis Association a minimal lesion consists of a slight infiltration without demonstrable cavity in one or both lungs. The total volume of involvement, regardless of distribution, shall not exceed the equivalent of the volume of lung tissue which lies above the second anterior rib on one side. In a moderately advanced lesion, one or both lungs may be involved but the total involvement shall not exceed: (a) slight dissemination throughout one lung; (b) severe infiltration throughout not more than one-third of one lung; (c) the total diameter of cavities, if present, not more than 4 cm. A far advanced lesion is anything more extensive than a moderately advanced lesion.

- (a) Minimal lesions respond well to phrenicectomy.
- (b) Moderately advanced lesions require, as a rule, pneumothorax for the exudative lesion and thoracoplasty for the productive lesion.
- (c) Far advanced lesions require thoracoplasty or pneumothorax or palliative treatment.

Palliative treatment includes pneumothorax and phrenicectomy. Childhood lesions are not treated with mechanical measures.

These mechanical types of treatment may be used singly or in combination. When using phrenicectomy, temporary paralysis is the rule except preceding thoracoplasty. If the patient does not do well with phrenicectomy a pneumothorax along with the phrenicectomy may be successful in controlling the lesion.

If the lesions are bilateral the treatment is directed to the side of the most extensive lesion or to the side showing cavity formation unless this cavity has developed in the lower

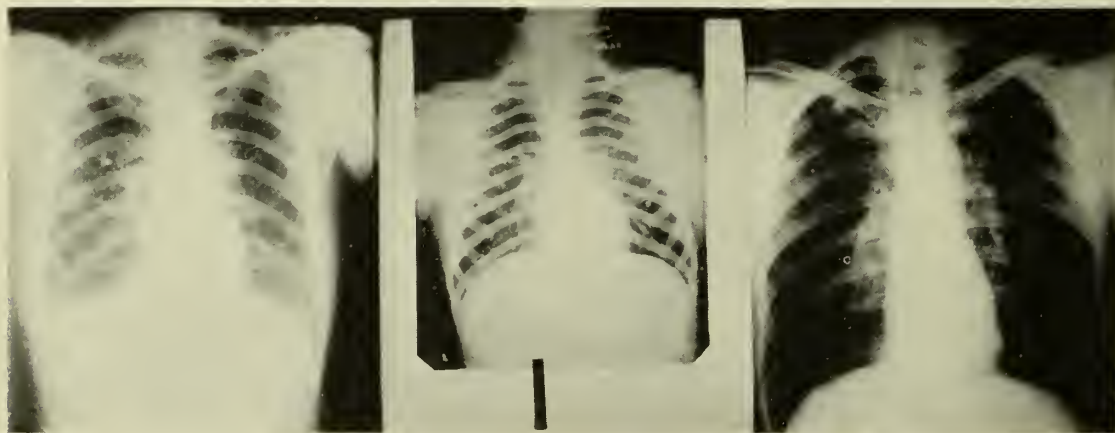


FIG. 1
Healed lesions. No treatment.

It is to be understood that the treatment of any active pulmonary tuberculous lesion requires bed rest, good food, fresh air, sunshine and education. The use of mechanical procedures in the treatment of tuberculosis are aids and adjuncts to the above stated plans.

Using the above classification of pulmonary tuberculosis we can make the following generalizations:

half of one lung by "seeding" from the upper half of the opposite lung.

The progress of the patient is determined by the temperature, pulse, weight, appetite, sedimentation rate and serial x-ray changes. The sedimentation rate is probably the most sensitive of all measures to determine activity of a lesion.

Calcified healed lesions or fibrotic healed lesions need no treatment (Fig. 1). However, these patients should be under constant observation with a physical examination and

†From the Departments of Surgery and Medicine, Emory University School of Medicine.

*Read before the Medical Association of Georgia, Macon, May 13, 1937.



FIG. 2

Minimal Tuberculosis. Conservative treatment. Temporary phrenicectomy may be of value.

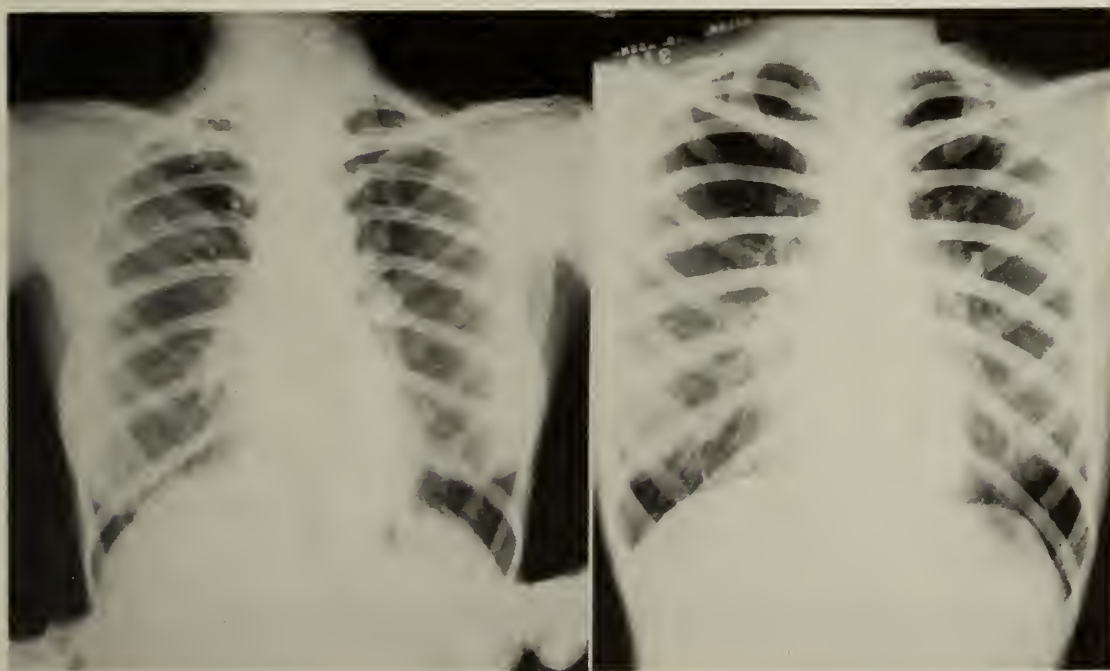


FIG. 2

Minimal Tuberculosis. Conservative treatment. Temporary phrenicectomy may be of value.

chest x-ray at least once a year. Especial care should be taken during epidemics of respiratory infections.

Lesions which fall into the group classified as minimal pulmonary tuberculosis generally respond well to bed rest alone. Rapidity of healing may be enhanced by phrenicectomy (Figs. 2 and 3). This procedure also gives added protection to a patient, thus the

statement, "phrenicectomy for protection." Temporary phrenicectomy is used except preceding thoracoplasty, as it is a reversible procedure and can be repeated any number of times if necessary.

Moderately advanced lesions may be of great or small extent. The less extensive lesions are placed in the more advanced group because of the presence of a cavity (Figs. 4

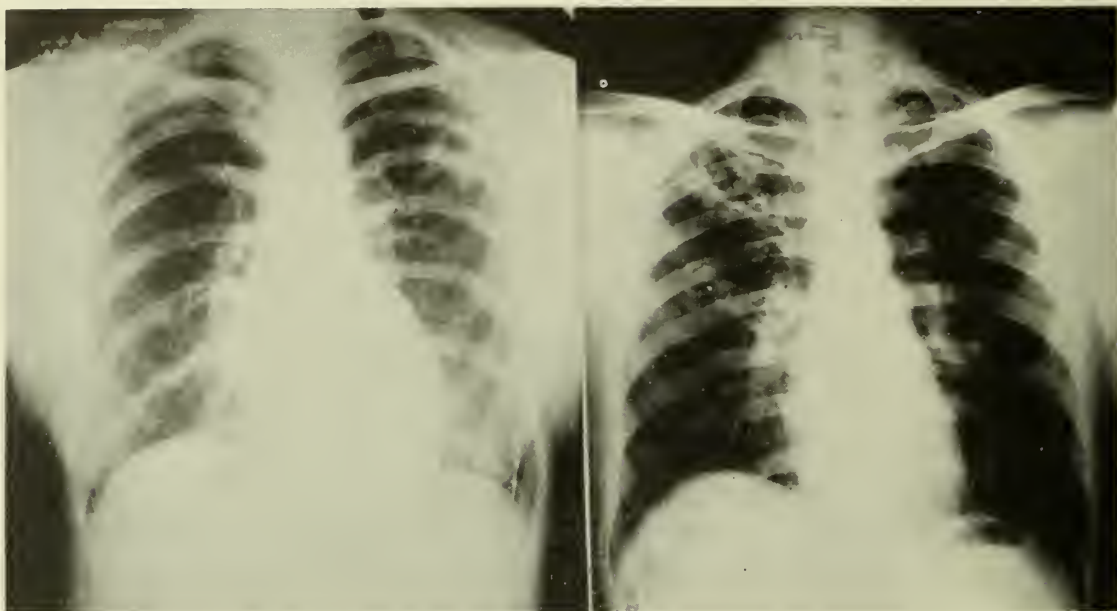


FIG. 4
Moderately advanced Tuberculosis. Thin-walled cavity. Phrenicectomy indicated (see text).



FIG. 5a
Tuberculous pneumonia. Immediate pneumothorax indicated.

FIG. 5b
Moderately advanced tuberculosis. Thick-walled cavity. Partial thoracoplasty indicated.

and 5-b). The cavity may be thin-walled and easily collapsible or thick-walled and resistant to compression. The former are easily compressed with pneumothorax. If the cavity wall is thin and only a small amount of infiltration exists a phrenicectomy may be successful provided the lesion is high in the apex or in the base of the lung. The thick-walled cavities are often resistant to pneumothorax, and thoracoplasty or extrapleural pneumolysis will be found necessary. Phren-

icectomy and pneumothorax can be used on the same side (Figs. 10 and 11).

Tuberculous pneumonia is generally agreed to be an immediate indication for pneumothorax (Fig. 5-a). If pneumothorax is delayed too long it cannot be accomplished because of adhesions. Since pneumonic lesions almost always excavate, some kind of mechanical treatment will be needed sooner or later. If pneumothorax fails, thoracoplasty will probably be necessary. Thus the

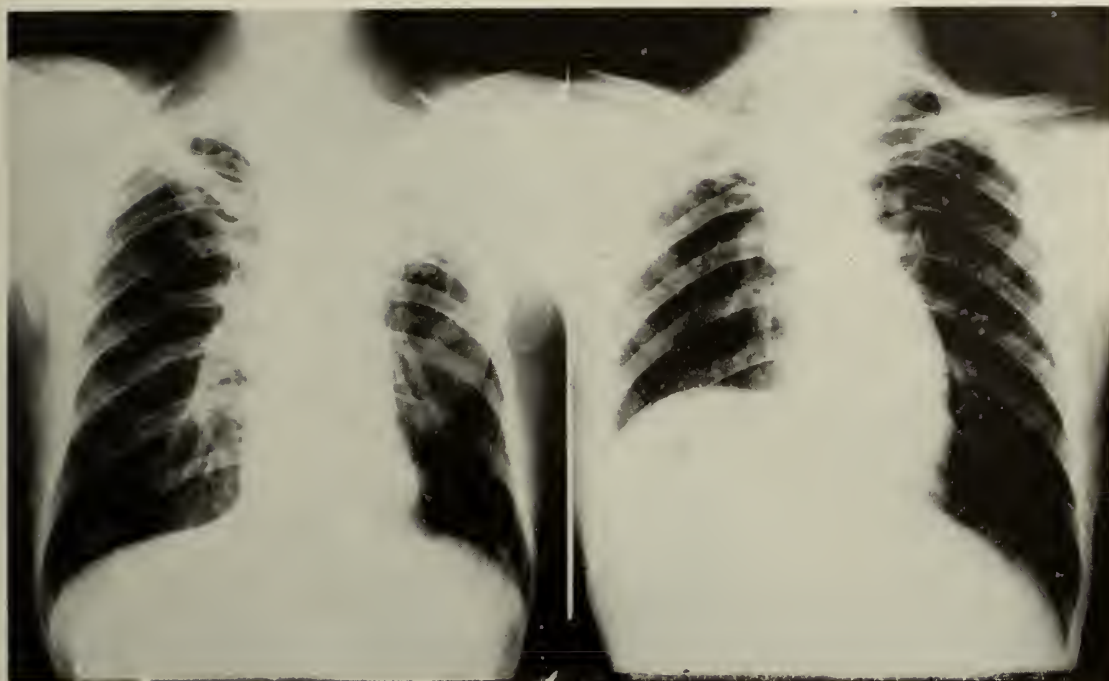


FIG. 6

Moderately advanced fibrous lesions. Permanent phrenicectomy followed by partial thoracoplasty indicated.



FIG. 7a

Far advanced lesion. Productive in left apex. Soft areas of "seeding" in both bases. Palliative treatment.

FIG. 7b

Far advanced lesion. Palliative treatment.

necessity for immediate action.

In moderately advanced lesions with much fibrosis and contraction pneumothorax is, for the most part, unsuccessful because adhesions prevent collapse of the diseased area (Figs. 6 and 7). Phrenicectomy also fails because of the extent of the disease and usual presence of a thick-wall cavity. Thoracoplasty is the method of choice. Permanent phrenicectomy always precedes the operation of thoraco-

plasty. Once having thought of thoracoplasty it is not wise to delay too long. Valuable time is lost and the patient's condition may reach a point where operation is contraindicated. Thoracoplasty is not an emergency operation for the desperately ill patient or a last resort for the chronically ill, but an operation for patients in good condition. Except in rare instances this operation is done on patients with unilateral lesions.



FIG. 8a
Moderately advanced lesion before phrenicectomy.



FIG. 8b
Four months after phrenicectomy. Clinically arrested.

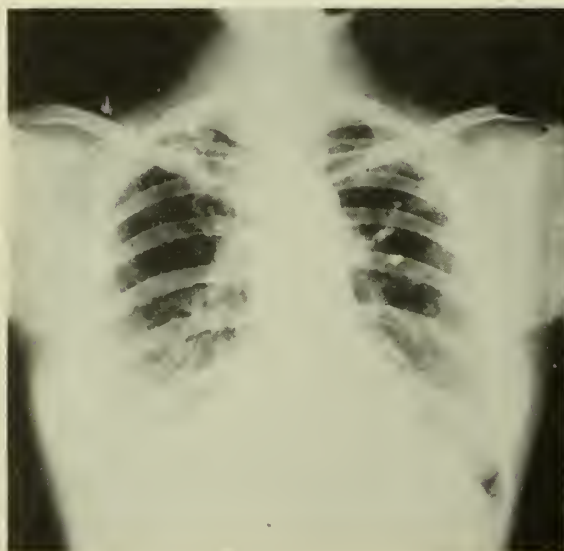


FIG. 9a
Moderately advanced lesion with 2 centimeter cavity
in right apex.



FIG. 9b
Three months after phrenicectomy. Clinically arrested.

The total number of ribs resected depends upon the extent of the disease and how well collapse is effected. The number of ribs removed at each stage of the operation depends upon the condition of the patient before and during the operation.

Where a moderately advanced lesion is present and "seeding" has taken place in the same lung, it is treated as a unilateral lesion.

Pneumothorax is used if successful collapse can be obtained; thoracoplasty if much fibrosis or adhesions are present. Should, however, the "seeding" involve the good lung, another plan of attack should be developed (Fig. 7-a).

The routine phrenicectomy preceding thoracoplasty may partially control the major lesion and prevent further "seeding" with some healing of the secondary lesion. If the



FIG. 10a
Moderately advanced lesion with cavity off right heart border.



FIG. 10b
Six weeks after pneumothorax (see text).



FIG. 11a
Same patient as Fig. 10. Pneumothorax and phrenicectomy.



FIG. 11b
Pneumothorax abandoned (see text).

secondary lesion remains uncontrolled, pneumothorax on this side may put the patient in condition for thoracoplasty on the side of the major lesion. Such procedures are performed only after due deliberation and only by one of wide experience. Such measures illustrate the individuality of each patient.

In far advanced bilateral lesions only palliative measures should be used (Fig. 7-b).

Pneumothorax is best if it can be accomplished. Thoracoplasty is not tolerated. Phrenicectomy may aid in partially controlling some of the disagreeable symptoms. These measures should be tried occasionally and, with good care, extensive lesions will heal.

Results of phrenicectomy applied to moderately advanced lesion are illustrated in Figs. 8 and 9. In Fig. 8-a the lesion involves the



FIG. 12a
Far advanced productive lesion with large cavity.
Phrenicectomy has been done.



FIG. 12b
Following thoracoplasty with compression. Clinically cured.



FIG. 13a
Far advanced lesion after phrenicectomy.



FIG. 13b
After complete thoracoplasty. Clinically arrested.

right apex. No cavity is present. There is "seeding" behind the second anterior rib on the left. Fig. 8-b, four months after phrenicectomy, shows the lesion contracted high in the apex. The area of "seeding" on the left side has completely disappeared. This il-

lustrates how control of the major lesion may control areas of "seeding" in other parts of the lung.

In Fig. 9 phrenicectomy has been applied to another type of moderately advanced lesion. Involving only a small area, this lesion

would be classified as minimal except for the presence of a 2 cm. cavity. In Fig. 9-b, three months after phrenicectomy, the lesion may be seen close to the mediastinum in the apex. Sputum became negative and sedimentation rate normal. Clinically this patient is arrested.

The reversibility of procedures is well illustrated in Figs. 10 and 11. The initial lesion is seen in the right base with cavity just off the right border of the heart. Pneumothorax was instituted because of the extent of the lesion (Fig. 10-b). It was felt that phrenicectomy would be insufficient. An excellent clinical result was obtained. Temperature and pulse became normal about two months after pneumothorax. Sputum became negative and sedimentation rate normal. However, under the fluoroscope a constant tugging was seen and stretching of the lesion between the fixed hilum of the lung and the moving diaphragm. Because this phrenicectomy was performed (Fig. 11-a). Compression of the lesion was so well accomplished that pneumothorax was abandoned without untoward effect (Fig. 11-b). This patient represents an apparently arrested lesion.

In Fig. 12 one sees what can be accomplished by phrenicectomy and partial thoracoplasty. This huge thick-walled cavity could not be controlled with phrenicectomy even after high elevation of the diaphragm. Partial thoracoplasty produced excellent compression of the diseased lung and closed the cavity. Clinically this patient is apparently cured.

In Fig. 13 are films of a far advanced lesion which responded well to phrenicectomy and complete thoracoplasty. Pneumothorax had previously failed. Partial thoracoplasty failed to close the cavities. After the complete operation (three stages) the sputum became negative and sedimentation rate normal.

Generalizations only have been considered. Each patient is an individual problem and the rules laid down here and elsewhere may not apply. Progress of the patient at bed rest, serial x-ray studies and many other factors serve as indications for mechanically treating these chest lesions. These same factors also are indications for changing from one plan to another. Experience is the largest factor in proper treatment.

SURGICAL TREATMENT OF TUBERCULOSIS*

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In the discussion of collapse measures in the treatment of pulmonary tuberculosis time will not permit a historical sketch of such measures. However, I wish to acknowledge the work of the pioneers and give them due credit for the procedures they have handed down to us. In the treatment of pulmonary tuberculosis the pioneers in their work realized that bed rest alone is insufficient and some other form of rest of the diseased lung must be found. Owing to the fact that only about one-sixth of our lung capacity is used while at rest a portion of either lung or both, or the whole of one lung may be put at complete rest with safety. This rest may be accompanied by one or a combination of the following methods:

1. Artificial pneumothorax is the method of choice when it can be used, especially in unilateral disease. However, it may be successfully used where there is a cavitation on one side with spread to the other. It is amazing how rapidly healing takes place on both sides when the cavity or cavities are closed. Pneumothorax may be complete or incomplete. When complete, and the cavities are closed no treatment other than rest is necessary. In the incomplete cases where the cavities are held open by adhesions further procedures are necessary for the closure of such cavities. In 48 cases of unsuccessful pneumothorax we have been able to effect a closure of the cavity by intrapleural pneumolysis. Careful stereoscopic examination of x-ray films of the chest taken just prior to the contemplated procedure must be done. In this study one is still in a quandary as to whether or not the adhesions are operable. A thorough thoracoscopic examination must be done to ascertain whether or not the adhesions are operable, and only with the thoracoscopic examination determine the point. The essentials of the operation are: there must be sufficient working space. Lung tissues must not be damaged, cavities must not be opened, and there must be assurance of hemorrhage control.

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

2. Phrenic nerve interruption in our hands has been very efficient in the cure of the disease, as well as in limiting the progress of the disease and in closing cavities at the apex or elsewhere. In more than 800 operations there has been only one death attributed to the operation. We have discontinued the evulsion of the nerve except in highly selected cases. Simple interruption may be done on one or both sides and may be a simple operation, and at times an extremely complicated one as there are so many anomalies of the nerve. On the same patient we have interrupted phrenic innervation on the same side as many as four times in three years. Owing to scar tissue and the disturbance of relations the re-entry operation at times is extremely complicated.

3. Thoracoplasty, a severe operation performed on a sick patient who has usually been sick for a period of years, however, in many instances is a life-saver. Here especially phthisiologist and surgeon must work together. The condition of the patient must be determined as accurately as is humanly possible, and the preparation is of paramount importance. A myocardium that will not stand four to six hours out of bed daily will not stand a thoracoplasty. The mediastinum must be fixed. Efficiency and accuracy must not be sacrificed for speed, though the time element is extremely important. The operation is always done in stages, allowing a maximum of 30 minutes operating time. As a rule the removal of the second rib first makes the first rib much easier to remove and the underlying vessels easier to protect. A patient will stand three or four fractional operations of 25 to 30 minutes far better than he will stand one operation of 45 minutes to an hour. Where other procedures have failed to close apical cavities and the patient is not a candidate for thoracoplasty we have performed apicolysis, removing $1\frac{1}{2}$ inches of the second, third or fourth rib, depending upon the size and location of the cavity, stripping the parietal pleural from the chest wall and packing enough paraffin to close the cavity. This operation from the observer's standpoint is equal to a thoracoplasty, and consumes much more time, but it is not attended with the shock attributed to thoracoplasty.

A COMPARATIVE STUDY OF PNEUMOTHORAX TREATMENTS IN THE WHITE AND NEGRO RACES*

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Much excellent material is at hand on pneumothorax therapy and there are a few papers comparing results in different races, but I have found no comparisons or mass study of ambulatory pneumothorax patients; therefore, I hope to add some fresh thought and illuminative results.

Economic Loss

We know that death is costly whether by design or by disease, but waiving the inestimable loss of loved ones, and viewing the cost from an economic angle only, few of us are aware of the staggering estimate that "the economic loss from deaths among Negroes alone amounts to \$100,000,000"¹—nor do we consider the great augmentation of these figures from continued morbidity.

The small group of Southern states "whose share of the nation's wealth is a meager one (16 per cent), are called upon to meet the public health and other needs of 75 per cent of the nation's Negro population,"² according to Guild.

Medical Attendance

Guild also writes: "In one of the larger Southern states in 1929, 16 per cent, or about one out of every six Negroes, died without medical attendance, even though deaths from external causes, violent and accidental deaths were excluded." Despite various medical relief measures the estimate stands at 23 per cent for the year 1934.

Tuberculosis Death Rate

"Tuberculosis causes one out of every eight deaths among Negroes, but only one out of every twenty-one among whites. It still holds second place as the cause of death among Negroes, but it has dropped to seventh place among whites. Negroes constitute only 25 per cent of the total population of the 13 Southern states, 53 per cent of the deaths from tuberculosis in these states occur in Negroes."³

Susceptibility of Negroes to Tuberculosis

Rosenau states: "There is no true racial im-

*Read before the Medical Association of Georgia, Macon, May 13, 1937.

munity to tuberculosis."⁴ Yet the fact remains that the death rate is three to five times as high in the Negroes as in the whites. Practically every writer on this subject has discussed the reasons for this difference. They are widely debated and the factors are not only numerous, but many of them are theoretical.

The essence of this debated question is expressed in two opinions: (1) True racial (genotypic) differences — which confer a higher resistance on one and a lower resistance on the other.⁸ (2) Environmental conditions—as used in its broad sense. However, such conditions do not explain the atypical pattern of tuberculosis as found in many individual Negroes.

Pathology

To evaluate correctly any comparison of treatment in the two races, we must have a certain knowledge of the differences in pathology.

Quoting from Dr. Esmond R. Long: "The tuberculosis in the Negro as compared with the average in the white is generally more massive in character with more tendency to caseous pneumonia and to generalization by both blood- and lymph-streams with resultant wider variations in anatomical type."⁴

In the Negro less resistance is found to the progress of tuberculosis as shown by rapidly excavating foci, by relative rarity of fibrosis and by perforations, which indicate poor individual defense, through anatomic boundaries of organs. I agree with Dr. Lincoln Fisher that today physicians are seeing far more fibrotic lesions in the Negro.

Response Under Pneumothorax Therapy

Pneumothorax treatment thus far has been used very little in Negroes. Its wider use is a necessity, thereby reducing the spread of the disease not only among the Negroes themselves, but among the white with whom they come in contact. Its further use will also shorten the length of stay in sanatoria.

McCain writes: "A few years ago some workers felt that Negroes responded so poorly to compression therapy that it was hardly worth while using it in members of this race. During the last six years at the North Carolina Sanatorium we have employed pneumothorax in 228 and phrenicectomy in 147 Negroes. Our experience leads us to feel that, for similar types and extent of lesions, Negroes respond almost as well as whites to compression therapy."

In 1933 Markoe and Thomas reported the results in 464 Negroes treated in Detroit sanatoriums, of whom 67 per cent were far advanced and 23 per cent moderately advanced, and in whom compression therapy was used in 70 per cent. They state that of the discharged cases 28 per cent were arrested, and of the cases still under treatment 53 per cent were showing favorable response.

Ambulatory Pneumothorax Clinics

Cuttar, Rodgers and Cippes⁵ stress the fact that delayed treatment is especially disastrous in the Negro. The waiting lists for admission to sanatoriums are always crowded and necessitate delay. These writers express the belief that 50 per cent or more of all Negroes needing hospitalization could be cared for by

No. 1.	SEX		AGE GROUPS								CONTACTS		WEIGHT DURING TREATMENT	
	Females	Males	14-20 Years	21-25 Years	26-30 Years	31-35 Years	36-40 Years	41-45 Years	46-52 Years	None	Yes	Lost	Gained	
Far Adv.—	White	17	16	5	12	7	4	3	0	2	21	12	15	18
	Negro	17	15	6	10	6	6	2	2	0	26	6	16	16
Mod. Adv.—	White	11	11	8	5	5	3	1	0	0	14	8	8	14
	Negro	19	2	6	5	3	4	1	2	0	15	6	13	8
Minimal—	White	0	1	1	0	0	0	0	0	0	0	1	0	1
	Negro	3	3	1	1	2	1	0	0	1	4	2	3	3
Total—	White	28	28	14	17	12	7	4	0	2	35	21	23	33
	Negro	39	20	13	16	11	11	3	4	1	45	14	32	27
Grand Total		67	48	27	33	23	18	7	4	3	80	35	55	60

No 2		PHYSICAL EXAMINATION OF CHEST					SIDE INVOLVED (X-RAY)				SIDE OF PNEUMOTHORAX			
		Right	Left	Right and Left	Negative	Unknown	Right	Left	Right and Left	Unknown	Right	Left	Right and Left	Unknown
Far Adv.—	White	12	8	11	1	1	5	5	22	1	19	12	2	0
	Negro	5	11	14	2	0	7	3	22	0	11	21	0	0
Mod. Adv.—	White	9	9	1	2	1	5	6	10	1	8	8	0	1
	Negro	5	6	6	4	0	5	6	10	0	10	11	0	0
Minimal—	White	1	0	0	0	0	1	0	0	0	1	0	0	0
	Negro	2	0	4	0	0	4	2	0	0	4	2	0	0
Total—	White	22	17	12	3	2	11	11	32	2	28	18	2	1
	Negro	12	17	24	6	0	16	11	32	0	25	34	0	0
Grand Total		34	34	36	9	2	27	22	64	2	53	52	2	1

No. 3		PERCENTAGE COLLAPSE								PNEUMOTHORAX		
		0 Per Cent	10 Per Cent	30 Per Cent	50 Per Cent	70 Per Cent	80 Per Cent	90 Per Cent	Unknown	Unsuccessful	Successful	Unknown
Far Adv. —	White	2	2	4	6	5	5	6	5	4	26	4
	Negro	6	6	1	7	1	5	4	1	14	18	0
Mod. Adv.—	White	1	1	5	8	2	0	5	0	3	19	0
	Negro	3	6	5	2	0	0	4	1	7	13	1
Minimal—	White	0	0	0	0	0	0	1	0	0	1	0
	Negro	2	0	2	2	0	0	0	0	3	3	0
Total—	White	3	3	9	14	7	5	12	5	7	46	4
	Negro	11	12	8	11	1	5	8	2	24	34	1
Grand Total		14	15	17	25	8	10	20	7	31	80	5

ambulatory pneumothorax clinics strategically placed throughout each state. With this I heartily agree.

Among other advantages that ambulatory pneumothorax clinics offer are that positive sputums tend to become negative earlier and patients return to work sooner.

Previous studies of pneumothorax treatments in the Negro have been made on those in institutions. Such patients are probably farther advanced and have a more acutely ill type of tuberculosis than those coming to an ambulatory clinic.

The Material

For the purpose of comparing treatments in the two races in this paper, all pneumothorax patients in the Atlanta Tuberculosis Clinic, numbering 56 whites and 59 Negroes, are studied and presented in like manner. They are divided into "Far Advanced," of which there are 33 whites and 32 Negroes; "Moderately Advanced," compris-

ing 22 whites and 21 Negroes; and "Minimal" tuberculosis, one of whom is white and six are Negroes. Each of these has its own grouping, as will be seen in the tables to follow. These tables contain far too many details to be discussed here, and, though closer inspection may prove valuable, only marked differences will be mentioned at this time.

Table 1 contains details of the groups on sex, age, positive and negative contacts, and weight during treatments. In this there are few differences except for a greater number in the negative contact group.

One author states in this connection: "Occupational contacts bring 50 per cent of the adolescent and adult colored population in the South in close touch with the white children at their most susceptible age. Childhood infection in the two races is virtually equal, but increased susceptibility or a more favorable soil brings to the Negro race the more abundant harvest. No doubt, we may justly

No. 4		LENGTH OF PNEUMOTHORAX TREATMENTS											
		3 Months or Less	6 Months	12 Months	18 Months	24 Months	30 Months	36 Months	48 Months	54 Months	72 Months	84 Months	Time Unknown
Far Adv.—	White	5	5	5	2	2	2	5	3	1	1	1	1
	Negro	22	1	1	0	2	0	1	0	0	0	0	0
Mod. Adv.—	White	2	2	6	3	3	1	3	1	1	0	0	0
	Negro	11	4	5	0	0	0	1	0	0	0	0	0
Minimal—	White	0	0	0	1	0	0	0	0	0	0	0	0
	Negro	4	2	0	0	0	0	0	0	0	0	0	0
Total—	White	7	7	11	6	5	3	8	4	2	1	1	1
	Negro	37	7	6	0	2	0	2	0	0	0	0	0
Grand Total		44	14	17	6	7	3	10	4	2	1	1	1

No. 5		STATE OF LUNG				PNEUMOTHORAX STARTED AT	
		Being Collapsed	Being Expanded	Stationary	Unknown	A. T. A. Clinic	Other Clinics
Far Adv.—	White	3	7	19	4	11	22
	Negro	7	2	12	0	29	3
Mod. Adv.—	White	2	9	7	0	12	9
	Negro	2	3	8	0	20	1
Minimal—	White	0	1	0	0	0	1
	Negro	1	1	3	0	6	0
Total—	White	5	19	26	4	23	32
	Negro	10	6	23	0	55	4
Grand Total		15	23	49	4	78	36

attribute more than 50 per cent of the infection arising among the 25,000,000 whites to contacts with the 10,000,000 colored people of the South."¹

The contest between the stethoscope and the x-ray is demonstrated in Table 2 with the selected side for the pneumothorax.

The stethoscope reveals 11 whites and 14 Negroes having bilateral far advanced lesions while the x-ray finds 22 of each. Likewise, the stethoscope discovers 1 white and 6 Negroes with moderately advanced lesions, while the x-ray shows 10 of each. It is evident that bilateral lesions, as revealed by the x-ray, exceed the combined unilateral lesions.

Needless to say that if pneumothorax clinics are to be placed throughout the country, good x-ray and fluoroscopic equipment must be at hand always, for it is well known that physical examination alone is unreliable.

If it is granted that usually pneumothorax is instituted on the more acute side, it is concluded that the Negro, both in the far and moderately advanced cases, has more acutely active lesions on the left side than the white race.

Clinically, the length of the disease in the whites is approximately three times as long as in the Negroes. In some instances, only four to six months elapse from the first symptoms to death in Negroes. In the clinic, however, there is not the preponderance of the acute cases as described in the literature. The tendency is toward a more chronic form. If seen during a spread of the lesion in the same or opposite lung, however, an acute picture is present. In these cases death may follow soon after.

The monocytes are continuously elevated during spreads. They conform more constantly to an elevated level in the majority of Negroes even in chronic cases. The whites

No. 6		ADHESIONS			FLUID			OPERATIONS		
		Absent	Present	Unknown	Absent	Present	Unknown	Pneumolysis	Phrenicotomy	Oleothorax
Far Adv.—	White	7	25	3	15	19	1	3	7	2
	Negro	12	13	3	16	10	5	0	7	1
Mod. Adv.—	White	7	15	0	11	11	0	1	4	2
	Negro	9	12	0	15	6	0	0	4	0
Minimal—	White	0	1	0	1	0	0	0	0	0
	Negro	1	5	0	5	1	0	0	0	0
Total—	White	14	41	3	27	30	1	4	11	4
	Negro	22	30	3	36	17	5	0	11	1
Grand Total		36	71	6	63	47	6	4	22	5

show fluctuation according to the periods of arrest and progression.

When we study, in Table 3, the percentage of collapse in both races, we find that 42 of the Negroes have a 50 per cent or less collapse and only 14 have more than a 50 per cent collapse. While among the whites 29 have a 50 per cent or less collapse and 24 have more than a 50 per cent collapse. It is not necessary to collapse the entire lung in every patient—especially in some bilateral and peripheral lesions.

I venture to place 80 cases in the so-called successful pneumothorax column as compared with 36 unsuccessful cases. The tables show that the Negroes increase the unsuccessful group. Seven white patients are unsuccessful as compared to 24 Negroes—leaving 46 and 34 respectively, as successful. The term "successful" as used here, does not mean a complete or "curative" collapse, but a "beneficial" collapse. Many of those cases listed as unsuccessful, because of obliteration or other causes, were at one time successful.

In Table 4 the length of pneumothorax treatments is given. To say that 37 of the Negroes have had treatment for less than three months seems unfair, yet such is the case. This first column also contains the unsuccessful group and the "early quitters."

Of the whites, 42 have treatments over a period of one year or more, while only 10 of the Negroes have like treatments.

The average length of time for the far advanced white is about 24 months as compared to 6 months in the Negro. In the moderately advanced division, the average for the

whites is 20.5 months as compared to 7 months for the Negro.

I venture to suggest that, if the average length of time of treatment in the Negro could be increased, the curative results would be greatly increased. There are three reasons for this shorter course of treatment in the Negro. (1) As will be shown later, he does not have the advantage of care and training derived from hospitalization; (2) Although the Negro division of the pneumothorax clinic is now able to care adequately for its large number of applicants, this is true of the past two years only; (At present the clinic has five Negro physicians who operate two tables simultaneously) and (3) There are wholly inadequate facilities for operative procedures which would convert many of the unsuccessful into successful collapses.

The largest number of lungs (49) are being held stationary. They are shown in Table 5. It is suggested in the literature that pneumothorax treatments should be instituted in a sanatorium and transferred to an ambulatory clinic a few weeks later.

Seventy-eight pneumothorax treatments had their initial injection at the clinic and only 36 in sanatoriums. So long as the clinic is seeing as many fibrotic and chronic cases, 40 per cent, I see no reason for hospitalization for initial injection, thus risking disastrous delay. It seems wiser to me to use the clinic as a clearing house and send the unsuccessful cases to a sanatorium where complications can be better treated.

The present status of the lungs is shown as follows: Six Negro cases are being expanded

No. 7		SANATORIUM CARE											AMOUNT OF EXERCISE AND REST				
		None	In San. Now	5 Months or Less	6 Months or More	12 Months or More	18 Months or More	24 Months or More	48 Months	60 Months	96 Months	Unknown	Working All or Part Time	Up All Time	Up Part Time	In Bed Constantly	Unknown
Far Adv.—	White	3	3	6	14	5	1	1	0	1	0	2	5	6	13	6	3
	Negro	21	9	4	3	2	0	1	0	0	1	0	1	6	12	13	0
Mod. Adv.—	White	8	0	4	6	2	0	0	1	0	0	0	3	6	12	1	1
	Negro	17	2	2	1	1	0	0	0	0	0	0	1	2	12	6	0
Minimal—	White	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
	Negro	6	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0
Total—	White	11	3	11	20	7	1	1	1	1	0	2	8	12	26	7	4
	Negro	44	11	6	4	3	0	1	0	0	1	0	2	10	26	21	0
Grand Total		55	24	17	24	10	1	2	1	1	1	2	10	22	52	28	4

No. 8.		SPUTUM AT PRESENT			CAVITIES			
		Negative	Positive	Unknown	Cavities	Cavities Open	Cavities Closed	Unknown
Far Adv.—	White	21	10	2	20	5	11	5
	Negro	12	20	0	19	10	9	0
Mod. Adv.—	White	18	3	1	9	1	7	1
	Negro	9	12	0	11	9	2	0
Minimal—	White	1	0	0	0	0	0	0
	Negro	4	1	1	0	0	0	0
Total—	White	40	13	3	29	6	18	6
	Negro	25	33	1	30	19	11	0
Grand Total		65	46	4	59	25	29	6

as compared to 19 whites. In the white and Negro clinics, 26 and 23 respectively are being held stationary and the remainder are being collapsed. From the individual charts it appears that the Negro will show a greater percentage collapse in a shorter length of time than the white, or will prove unsuccessful at an earlier date.

A comparison of the adhesions and fluid is given in Table 6. There are fewer incidences of adhesions and fluid in the Negro than in the white. This may be due to the relative shorter time of air administrations to the Negro and the apparently shorter duration of the acute illness prior to the clinic admission, or this may be another manifestation of the lack of resistance.

In an ambulatory clinic complications are of a more varied type. These causes are noted for stopping treatments, obliteration, asthma, adhesions, fluid, deliberate failure to return, diphtheria carrier and severe reactions.

Other complications occurring in this series, but not causing cessation of treatments, are broncho-pleural fistulas, adhesions, fluid, pyothorax, syphilis, nutritional diseases and tuberculosis of other organs of the body. Twenty per cent of the Negroes have syphilis as compared to 5 per cent of the whites. This disease always indicates a poorer prognosis.

If adequate operative facilities were available phrenic interruption and pneumolysis would have been used in this series far more often. This lack increases greatly our unsuccessful group and lowers curative results.

Sanatorium training as well as care is invaluable. In Table 7, only one fact needs to be stressed, namely—44 of the Negroes present no sanatorium care as compared to 11 whites. Our cries of lamentation for more beds still rise little heeded.

In the group, "Amount of Exercise and Rest," we see that an equal number are up

No. 9.

CLASSIFICATION OF THE RESULTS OF PNEUMOTHORAX TREATMENTS IN THE WHITE AND COLORED RACE

		Apparently Cured	Arrested	Apparently Arrested	Improved	Unimproved	Died	Lost	Discharged to Private Physician	Unknown
Far Adv.—	White	3	4	8	11	3	1	6	3	3
	Negro	0	0	3	11	13	5	6	0	0
Mod. Adv.—	White	4	3	2	5	2	4	1	5	1
	Negro	1	2	0	6	7	5	1	0	0
Minimal—	White	1	0	0	0	0	0	0	0	0
	Negro	0	0	1	3	1	1	0	0	0
Total—	White	8	7	10	16	5	5	7	8	4
	Negro	1	2	4	20	21	10	1	0	0
Grand Total		9	9	14	36	26	15	8	8	4

part time. When the Negro is sick enough to be confined to bed constantly, however, he is apparently more acutely ill than the white. There are 21 Negroes as compared with 7 whites who are confined to bed continuously except when attending clinic.

There are 8 whites working all or part time as compared to only 2 Negroes.

In Table 8 the positive and negative sputums are reversed in the two races. Among the whites 40 show negative sputum and 13 positive. Many of the Negro patients seem to cough less than the whites and raise far less sputum. If sufficient quantity could be raised for examination, many of the positive sputums among the Negroes would be negative.

In the combined races 29 cavities are apparently closed and 25 remain open. Eleven of these are Negroes and 18 are white. The Negroes show 19 cavities remaining open as compared to 6 whites.

Summary of Facts Influencing Results

Let us consider together the facts thus far presented that influence the results of the treatments in this series. I mention—

Racial (Genotypic) differences (mysterious in character) which confer a higher resistance (White); lower resistance (Negro). Pathology—Chronic (generally) (White); acute generally (Negro); Tendency to fibrosis (White); rarity of fibrosis (Negro). Clinical course—chronic (White); acute and rapid (Negro). Environment and Health Education—Good (White); Poor (Negro). Operative facilities—Fair (White); Inadequate (Negro).

Summary of Important Items from Previous Tables

	White	Negro
This series consists of	56	59
Far advanced	33	32
Moderately advanced	22	21
Minimal	1	6
Pneumothorax on left side	18	34
Collapses of 50 per cent or less	29	42
Collapses of more than 50 per cent	24	14
Collapses that are successful	46	34
Collapses that are unsuccessful	7	24
Treatments of three months or less	7	37
Treatments of one year or more	42	10
Average time for far advanced	24 mo.	6 mo.
Average time for moderately advanced	20.5 mo.	7 mo.
No sanatorium care	11	44
Negative sputum	40	25
Positive sputum	13	33
Cavities open after treatment	6	19
Cavities closed after treatment	18	11

Table 9 portrays the results. Only one Negro is apparently cured as compared to 8 whites and 7 whites arrested as compared to 2 Negroes. However, in the improved group are only 16 whites as compared to 20 Negroes, and yet in the unimproved group there are 21 Negroes as compared to 5 whites. Ten Negroes die as compared to 5 whites.

An analysis of the unimproved reveals that more than 50 per cent of each race have positive sputum. All whites have past sanatorium care while only 50 per cent of the Negroes have. The length of time of pneumothorax treatments, the causes of cessation of treatments and the number of cavities remaining open are in the same proportion as those found in the improved group. The

cause of this lack of improvement, therefore, must be explained otherwise.

Table 10

The Actual Causes of Unimprovement, as Shown by the Individual Clinical Charts, Are as Follows:

	White	Negro
Poor Collapse Combined with Syphilis and Spreading	0	5
Spreading Combined with Reaction and Environment	1	4
Poor Cooperation and Environment	0	3
Tuberculous Complications of Other Organs	1	2
Reaction After Refills	0	2
Non-Tuberculous Complication	0	2
Overwhelming Infection in the Beginning	1	1
Deliberate Failure to Return	1	1
Fluid and Pyothorax	0	1

In a like study of those who died more than 50 per cent of the Negroes had positive sputum. The reverse is true in the whites. Two out of 10 Negroes have had sanatorium care while all the whites except one have had like care. There is no outstanding difference between this group and the improved group in the length of treatment, the percentage collapse or the cavities remaining open after treatment. Therefore, the predominant causes of death are not presented as yet.

Table 11

The Actual Causes of Death, as Shown by the Individual Clinical Charts, Are as Follows:

	White	Negro
Overwhelming Infection at the Beginning Combined with Myocardial Complications and Syphilis in One Case Each	1	1
Spreading Combined with Myocardial Complications and Syphilis in One Case Each	1	2
Syphilis Combined with Spreading and Adhesions in One Case Each	0	2
Dyspnea After Phrenicotomy	1	1
Non-Tuberculous Complications	1	1
Spontaneous Pneumothorax Followed by Pyothorax	0	1
Influenza	1	0

Conclusions

Cooperation of the patients is excellent except in a few instances. However, we find that three times as many Negroes as whites refuse pneumothorax treatments, and that it is very difficult to maintain absolute bed rest between treatments.

The Negro race shows a greater tendency toward more severe immediate reactions following initial injections of air. Increase in pulse rate, temperature, indigestion, dyspnea and pain have been noted, but usually are of

reasonably short duration. When fear, begotten of ignorance, and abnormal psychology are taken into consideration, I believe that part of this can be explained.

Considering the disadvantages under which the Negro labors, I feel that he reacts to pneumothorax therapy as well as the whites.

For better results in pneumothorax treatment among the Negroes, I urge strongly the following:

1. Better environment and more health education.

2. A better understanding of pathology of the Negro tuberculous lung.

3. More successful collapses among the Negroes.

4. An increase in the average length of time that treatments are given.

5. More surgeons who by phrenic interruption and other surgical procedures, can aid in converting unsuccessful and complicated cases into successful cases until admission to a sanatorium can be secured.

6. Strategically placed pneumothorax clinics, adequately equipped and handled, throughout each state.

7. The use of ambulatory clinics as clearing houses that retain and treat the simpler cases.

8. Immediate admission to sanatorium of all unsuccessful or complicated pneumothorax cases as found in these "clearing houses."

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DISCUSSION OF SYMPOSIUM ON TUBERCULOSIS

Dr. H. C. Schenck (Atlanta): There is not enough time at my disposal to adequately discuss these very interesting and excellent papers and addresses. I have jotted down a few facts, some conclusions and suggestions, to partly remedy the tuberculosis situation in Georgia, which is not very much different from the tuberculosis situation in the United States.

Tuberculosis remains one of our most serious health problems. The tuberculin test proves that one to one and a half million people in Georgia are infected with tuberculosis. We have a constant level of eight to ten thousand cases of tuberculosis in Georgia requiring treatment. We have only 700 beds for people with tuberculosis, and not more than 15 per cent of those needing treatment can have sanatorium care. In the past three years, there have been more than 1,700 deaths annually. At the present rate of reduction in the death rate it would take over fifty years to eliminate tuberculosis, to wipe it out, if we could keep up that constant rate, which is impossible.

The remedy lies in the more general recognition of early tuberculosis, through the positive tuberculin test in combination with symptoms, especially loss of energy, even though the x-ray of the chest be negative, provided no other cause for the symptoms can be found.

It lies in the institution of strict bed care, 24 hours a day, by any means whatsoever, until the symptoms subside, whenever tuberculosis is suspected and whenever it is diagnosed. Early or suspected cases may thus be arrested quite soon, and the more advanced might also be arrested or they might hold their own until they could be admitted to the hospital for lung compression.

And the control of tuberculosis also lies in the isolation of all communicable cases in every community until they are closed.

For the present, it is suggested that the means for providing bed care and effective isolation of the indigent can be had most cheaply through the building of small cottages on county farms.

Fully adequate handling of the tuberculosis problem cannot be had until more sanatoria are built, preferably state-maintained 100 to 150 bed hospitals in every congressional district. These could offer a more adequate consultation and clinic service to the State as a whole than would be the case were more beds established at Alto, and would afford many other obvious advantages.

In addition to the foregoing, there must be provided adequate social and vocational rehabilitation for people whom we have permitted to break down with tuberculosis who have recovered, if we are to prevent the relapses that are sure to occur if occupations in many instances are not changed.

If we are willing to pay the costs, we can wipe out tuberculosis. We cannot do it otherwise.

Dr. C. C. Aven (Atlanta): The statement that Dr. Schenck made that 15 per cent of the patients that have tuberculosis obtain sanatorium care brings out this very important, and vital fact, that 85 per cent of the people that have tuberculosis must rely on the

private doctor. Therefore, our educational program should continue among our physicians so that they will be enabled to make much earlier diagnosis than they have in the past. It also brings out the very important fact that by virtue of the work that the men in the sanatorium do, they do not always see the problem as the private physician sees it. They talk of two, three, four and five years, as the late Dr. Dunne of Asheville did, but Dr. Dunne had a very responsive and well-paying group of patients, and frequently he kept patients with minimal lesions in bed for two and three years. Artificial pneumothorax was then not in vogue. The problems that present themselves to us as private physicians are so many I will not have time to mention them. I want to mention one. Sometimes it is almost an absolute necessity for a patient to return to work. I have a young lady who has been taking artificial pneumothorax for two and a half years, who obtained a negative sputum in three and a half months. She went back to work at the end of five months and has continued to work for over two years.

I think the strongest point made today was made by Dr. Strickler in saying we must individualize each case. Each patient has a definite immunizing power or resistance in his body that we must not overlook. Their mental and psychologic reactions are very important in putting these patients back on the job. I think as private doctors we must take into consideration all of these facts and consider the mental, sociologic, economic, and other factors that are important in adequately caring for these patients.

I want to congratulate the men at Alto on doing a noble piece of work, and I feel that we have a Governor and a people that are interested in building and maintaining a better and more adequate institution. I think it behooves us to take up our duty as citizens and go back into our community and support legislators and men who will uphold the government and the men who are in power to help us build more and better sanatoriums to help take care of these people.

Dr. F. K. Boland, Jr. (Atlanta): I enjoyed the symposium on tuberculosis. I want to take this opportunity to emphasize the surgical possibilities in selected cases. We have one particular case that turned out so well that we should like to show her slides.

(Slide) This is a white female, 30 years old, who had a unilateral lesion and had all the usual symptoms.

(Slide) She had a phrenicectomy and received a fairly good rise of the diaphragm but continued not to be so well, and with the aid of the internist I decided it was a good case for thoracoplasty, which she had.

(Slide) She received a good collapse and within two months after this picture was made she was sputum-free and temperature-free.

(Slide) Inside of a year she was back on her secretarial job.

Dr. J. A. Redfearn (Albany): I should like to remind you that at our last annual meeting a resolution was adopted which had been adopted almost twenty years ago by the National Tuberculosis Association, by the American Hospital Association, by the American Medical Association, and by other organizations, urging all general hospitals, where feasible, to build tubercu-

lous wards in order that they could take care of some of our tuberculous patients who cannot be treated at the present time elsewhere. Dr. Schenck's plan of a hospital for each district is perhaps the best solution. It seems, however, that that is in the distant future. I hope it is not. Until there is something done, it is up to us in our local communities and particularly in the smaller cities to do something about it, because 80 per cent, we are told, of the children in homes where there are active cases get this disease unless those patients are taken out and the disease arrested.

Things can be done, in many instances. We are getting somewhere in treating tuberculosis, using Alto as the base. Perhaps a hundred doctors in Georgia have now gone to Alto and had sufficient training to do refills, which is a great help. Alto can handle only about 300 patients at one time, and Dr. Schenck said there were between 8,000 and 10,000 in Georgia that need treatment. So Alto cannot go along and keep patients there long enough to cure them, but they must get them out and make room for patients in other counties. We can help a great deal when they come home by learning the simple technic of the refill, and I want to urge upon those who are giving pneumothorax, that it is quite important to give sufficient air and give it frequently enough to keep that lung at rest, because if you allow it to expand partially then you give the tuberculous organisms a chance to get more oxygen, which is essential to the growth and development.

MEDICINE IN MAELSTROM

RALPH H. CHANEY, M.D.

Augusta

Medicine appears to be lying on the verge of a great pit in which the maelstrom is seething to totally engulf and destroy it should it slip over the brink. What I have to say represents only my personal views which I have tried to formulate following many moments of thought concerning the factors and factions which are not only embroiling us but the entire world. The changes which are taking place in Europe, the conflict in Spain and the tumult in the Orient are but evidences of the prevalence of the spirit of unrest which involves the entire world. Whether this unrest represents a movement that is progressive or whether it represents a regressive movement only the passage of centuries can tell. History shows us that the development of the human race has been a constant struggle between good and bad, wealth and poverty, education and ignorance, and that in this struggle civilization has frequently regressed for many centuries before overcoming the effects of such conflicts.

Because medicine has always been an individualistic profession, we as individuals and collectively in our organizations have seemed to feel that so long as we kept our own fences in order and made a good job of our own knitting that we could ignore everything else. The result of this has been that much of the commanding influence has slipped from the hands of medical men to the hands of laymen controlling great endowed foundations or to the hands of public servants. Several recent events illustrate this tendency. The first of these lapses is shown by the fact that the medical profession while striving for years to eradicate syphilis by treating countless numbers of individuals made no organized effort to lay the perils of the disease before the public and left the matter for the U. S. Public Health Service, urged on by Dr. Parran, to bring the question forward with such force as to be effective. Do not think for a moment that I belittle the work of the Public Health Service and the service which Dr. Parran has done for the country as a whole, but I do think that the medical profession lost an opportunity to advance its prestige with the rank and file of lay persons when it left this work to a public agency. It falls within reason that the lay person when confronted by the facts cannot be blamed for drawing the deduction that the progress of medicine is best advanced by the physician in the public service rather than by the physician in private practice and that in the long run the general public would be better off if medicine were entirely regimented into the hands of public agencies. Those of you who have read the speech of Senator Lewis of Illinois before the House of Delegates of the *American Medical Association* at Atlantic City (and those of you who have not should read it) perhaps have been tortured mentally in trying to solve just what its meaning might be and have arrived at the conclusion that unless organized medicine does something for itself Federal intervention is going to take place and make all physicians public servants. The joint resolution later introduced by Senator Lewis indicates that at least some of our prominent men are thinking toward the day when all individuals will be subservient to the Social Security Act and if they are subject to the benefits of that Act they should also be provided with medical

security. Thus, as I see the problem, organized medicine must take steps to educate the public as to what their plans for the future are or they are going to have some plans made for them. In the latter instance, those plans may not conform to the normal individualistic tendency of most of the present day physicians, and when individualism departs from medicine there is usually a period of great stagnation.

In our own State we have been trying to pass a basic science bill for some years, and why has it failed? Not because of any inherent defect in the bill, because even the most unintelligent person, when the basic facts are explained, believes that the person endeavoring to benefit or cure his ailments should have sound knowledge concerning the basic functions of the human body, but because the physicians of the State-at-large have failed to make themselves sufficiently familiar with the facts concerning the bill to explain its meaning when questioned. In fact, several times I have been questioned as to whether it was sound policy to accept the endorsement of any measure by a person who could not explain the meaning of the measure. The fact that these questions have been asked indicates strongly that some of our legislators have found a dearth of information among the members of our own profession. Lack of information certainly played a part in keeping the constitutional amendment to allow the various counties to levy taxes to support their own indigent sick from coming before the general electoral body. This again is a matter of education and the medical profession cannot simply advocate these measures in assembled conclave and believe that their work is done but must take steps to bring the situation out in the open. The only means by which this can be done is by open publicity and if the code of the profession is going to remain unchanged as it has for centuries this publicity must be brought about through the medium of the county, district and State associations and not by any single individual. Neither will it serve to have this program develop from the influence of a small group within a larger group, but it must spring from the general enthusiasm of all. This opportunity is now at hand in the newly authorized Bureau of Public Relations of THE MEDICAL ASSOCIATION OF GEORGIA

and I speak for your individual and collective support of its policies, both morally and financially.

I wish that I could see forward with as little concern as some of my present colleagues can, in that they feel secure in the idea that because the medical profession has served so well in the past that the public in general will never consent to the passage of a measure such as has been introduced in our national senate. Personally, I recognize that the public can be led, often in a direction not of its own volition, and that unless we use every measure to lead the public in a sane pathway toward medical progress then we are remiss in our duty. Either we are going forward or we are going to fall by the wayside.

WAKE UP AND GIVE

M. M. McCORD, M.D.†

Rome

After thirty-five years as a member of the medical profession and nearly a quarter of a century as an official of the State Association, I am convinced that the greatest stumbling block to the progress of organized medicine is nothing short of plain unadulterated indifference.

There are approximately twenty-two hundred medical men in this State eligible for membership in our State Association, yet there are about four hundred less than that number who are regular members and help to support organized medicine. There are approximately fifty counties in Georgia which have no county organization at all, but some physicians in those counties are members through adjoining counties. Of the eighteen hundred members of our State Association only about one-third of this number ever attend one of the annual sessions.

A few years ago a committee appeared before the Council at one of our annual meetings and filed a protest to the payment of annual dues of \$7.00. This amount was to cover the cost of editing and publishing the State Journal, Medical Defense and other necessary expenses in the work of organized medicine in Georgia. We had to reduce the dues one dollar a year to keep peace in the

†Councillor.

ranks. yet we are informed that a certain cult in Georgia has each of its members pay at least \$100.00 a year—and they do it with a smile. They know that much of the money will be spent in an effort to keep organized medicine from making any progress in our State.

Many of our medical men are always ready to criticise the State Association for not getting certain medical legislation through the State assembly, yet these same men are so indifferent about the matter that they are not willing to make a contribution to help the cause. Some of them even raise a big kick if the annual dues are raised "one lone dollar." Some of our men are spending fifty dollars a year for soft drinks (to say nothing of hard drinks) and at least one hundred dollars a year for smokes, yet they are so indifferent about the future of their profession that they will frown if asked to pay \$10.00 a year for five years to help get our program on a firm basis of action.

It is not entirely a matter of whether or not we shall have state medicine in our country. If we continue our indifference in the defense of organized medicine we are doomed to retrograde beyond repair. The various cults have gotten many of the lawmakers of our State apparently in sympathy with them. The public has been taught that the medical profession is the greatest "trust" in our country and that doctors have organized against them and make them pay exorbitant fees. We know this is not true, but the great rank and file of folks who walk the surface of the earth do not know but what it is true. Most of them believe everything they hear.

The indifference of the medical profession has likewise established an equal indifference with the public. Some few members of our profession corner a legislator on the street and spend a few minutes in paying their respects to unscrupulous "cults," which only tends to advertise the cults with the lawmaker. Some of our members even go to the Capitol and endeavor to have a talk with the various members of the General Assembly. Some of these men are found non-committal, some are outspoken against us, and others leave the impression that they are at that time with us in our fight. The place to "stick" is with the folks who send these men to the Legislature. We need a better understanding between the rank

and file of citizens of our State and the medical profession, which will in like manner give a better cooperation with the lawmakers. We are badly misunderstood by false impressions conveyed by some unscrupulous cults in their various means of forcing their wares on the public. We have a committee of real active men of our profession appointed to work out the best plan for developing a better understanding with the laity. It can be done and if we go to the masses with our problems they will soon see that our efforts are strictly in their behalf, but it takes some money to carry forward this program.

There is no class of folks, no profession or trade which renders in twenty-four hours of every day the service to humanity that is rendered by medical doctors, regardless of pay. There is no organization in our State or nation which turns loose as much real charity work to the sick and suffering as members of the medical profession. Members of the General Assembly know this, and then when we want to pass some legislation which will prevent "quacks" from entering the healing art of our State and advertising to do many things they absolutely know they cannot do, will do their part to keep the gap down and let everything pass through. The uninformed public is the "goat" to all these cults, who are not after anything but the dollar. They usually get the cash before they attempt to do anything, for they know that if they wait until after the treatment is given, the poor "sucker" might not feel like paying the bill. Practically every piece of legislation which medical organization has ever attempted to get through the machine of our State general assembly was distinctly for the good of the masses that the doctors serve, and not a selfish matter at all.

It is time that we "Wake Up and Give" if we expect to push forward and hold the place we should have with the public. We are certainly not going to make progress as we have been doing. It is time to cast aside indifference and open our pocketbooks and stand squarely behind organized medicine 100 per cent until we win, then we should keep fighting so that we may stay won.

The Southern Medical Association will meet in the Municipal Auditorium, New Orleans, La., November 30-December 1, 2, 3, 1937. All the members of the Medical Association of Georgia are invited.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

NOVEMBER, 1937

THANKSGIVING

A day set apart for thanksgiving is a beautiful custom inaugurated by the Pilgrims at Plymouth Bay Colony in 1621. President Washington named Thursday, Nov. 26, 1789, as a day of thanksgiving. In 1864 President Lincoln declared the last Thursday in November for the same purpose and each succeeding president has followed his example.

In comparison with present day standards of living the early colonizers of America would probably be considered destitute but they were moulded of a fiber and determination that would brook no hardships, and were happy in their new freedom and so pleased with the bounties of Providence that they assembled in churches and homes to give thanks for the blessings they were permitted to enjoy. It is through the labor of peoples of their stamina and fortitude that we now enjoy the luxuries that were not theirs.

At this season it would be well for our profession to "take stock" and count the blessings and prosperity vouchsafed us. Nature, this passing year, has supplied us with an abundance of material things that our forefathers scarcely dreamed of and the physicians of Georgia will share this bounty.

It is axiomatic in ethical teaching that the more one knows the greater his responsibility, and ours is quite above the average. It is our bounden duty to contribute our part in influence, teaching and materially in aiding our people to understand those essentials of disease prevention and what course to follow when illness supervenes. Ours is a great state, one whose possibilities for production and healthful living are practically illimitable; and, if our members will strive to educate our people in matters of health our standard of living will be so raised that everyone will profit. Eradication of syphilis, malaria, hookworm, tuberculosis, pellagra, and improved nutrition are attainable, and concerted action

by the members of THE MEDICAL ASSOCIATION OF GEORGIA is capable of carrying out such a program with ultimate success.

Your association is attempting to accomplish these as some of its aims through its Bureau of Public Relations. Would not each of our members like to make a thanksgiving offering for this worthwhile and altruistic effort?

GEO. A. TRAYLOR, M.D., *President*

TUBERCULOSIS IN GEORGIA

Until recent years tuberculosis headed the list of the causes of death in this country. Since it has become known that something could be done to control this "white plague" it no longer leads all other death-dealing diseases, but even now control measures and treatment are ineffective, largely because of ignorance and inadequate facilities. Fortunately, much can be accomplished if the knowledge in hand is put to good use, as has been demonstrated in the more enlightened sections of our country. Unfortunately there was a period of many years in which doctors and patients alike believed that climate played a very important part in bringing about recovery from this disease. Someone advanced the idea that a high, dry altitude was essential in carrying out treatment. The result was that when the disease was found in the valleys and plains it was so far advanced the patients had often made the diagnosis. Perhaps it was just as well then for them to be sent away to die because that was generally what happened, for it protected other members of the household, 80 per cent of whom, if they were children, were infected through prolonged association.

It is said that anyone can come in occasional contact with open cases of tuberculosis and resist the disease, but where there is continuous and overwhelming infection the resistance is finally broken down, particularly in childhood. So far as I know all authorities are agreed that climate is no longer considered of curative value. The one essential is rest. Of course, nourishing food is necessary, but that is also true of any other illness, or for individuals in good health. All treatment is rest in some form, whether general body rest or some form of collapse therapy, which means that the lung is squeezed down so that it cannot function and thus becomes inactive

until healing takes place when it is again allowed to expand and continue its normal duties. Remember, however, that tuberculosis is a chronic disease and that time, and plenty of time, is the requisite.

About twenty years ago the National Tuberculosis Association, realizing that most of the people who had tuberculosis could not be treated because of the lack of available hospital facilities, passed a resolution to the effect that where feasible all general hospitals build wards for tuberculous patients, where x-ray and operating room facilities could be used and where the proper food could be given. Without these essentials tuberculosis cannot be properly treated because about 85 per cent of the treatment is surgical if pneumothorax is considered a surgical procedure. A few years later the American Medical Association, the American Hospital Association, to which most of the good hospitals belong, and, in 1936, THE MEDICAL ASSOCIATION OF GEORGIA and the State Pharmaceutical Association all endorsed the same resolution. Since doctors learned that with proper training and facilities tuberculosis could be successfully treated at home they were encouraged to become more proficient in diagnosis, thus finding the disease much earlier when the patient could be assured of recovery. Naturally many objections to the plan were thought out, none of which stand up in the light of present day knowledge. When this plan is undertaken in a community these objections are generally brought up and it takes time and education to overcome them.

One objection usually raised is the fear that patients will not continue to come from other counties because of the fear of contracting tuberculosis in a hospital where a ward is maintained for treatment of patients suffering from this disease. This question has been brought up in many localities where control efforts were advocated and has always proved groundless. Another fear is that property values will decline near the hospital, but strange as it may seem they usually advance. Property owners near Alto, I am told, even tried to get an injunction against the State of Georgia to prevent the erection of the Sanatorium, but to their chagrin they failed. Later they learned to their delight that values had enhanced 200 per cent. There are many other excuses offered all of which are success-

fully and satisfactorily answered in literature which may be secured by writing the National Tuberculosis Association, Atlanta. We should get our heads out of the sand and use them for thinking instead of merely adjusting our prejudices. It is absurd to think that in some mysterious way tuberculosis can be controlled by doing nothing about it, particularly when we do not even know where the cases are in some instances. It is equally as absurd to argue that doctors and nurses cannot control isolated cases, the very bed-rock of medical training.

Unfortunately each year a group of little helpless children pay the price, some with their lives. There are perhaps 10,000 cases of tuberculosis in Georgia in need of treatment. Our State institution at Alto can care for only about 300 patients at a time and then for only about 6 months when it takes 18 months to 3 years to cure most of them. It is apparent, then, that successful treatment must be largely local. Doubtless the ideal would be several more institutions scattered over the State similar to Alto. This may come about at some future time, but it means that the State will have to spend several million dollars. Meanwhile, if we are enlightened people in progressive communities we must insist that something be done without delay. Georgia is progressive and if our people are enlightened the time will soon arrive when this plan will be carried out in all progressive communities.

Tuberculosis strikes down young men and women in the so-called struggling period of life, from 18 to 30, when they can not afford to be sick, nor can they afford for long at a time the expense of travel and treatment in distant hospitals. If the disease is found early and treatment is begun and kept up at the hospital until patients are safe to return home and back to the hospitals at stated intervals for treatment, lasting only a few minutes, some may even return to their jobs and work for many months before they are cured provided they will keep up the treatments advised. Perhaps it has occurred to you that the proper thing to do is to build other hospitals separate from the general hospitals, a plan which would be all right if sufficient funds were available to build and equip the hospitals, but other funds would have to be raised to pay technicians, operating room as-

sistants, dietitians, etc., all of whom are available without additional charge at any good hospital. A few of these young people who can afford it are getting treatment. Many are in the throes of this agonizing disease, helpless and hopeless. It is in the interest of these citizens that leads me to make this plea that you lend your assistance to make Georgia a healthier, happier and safer place in which to live. In conclusion, permit me to remind you that this is the one major public health problem in Georgia that is inadequately cared for. United and intelligent effort can bring about a most satisfactory control within ten years. Let us do something about it in Georgia!

J. A. REDFEARN, M.D.

Albany.

TUBERCULOSIS

Another star for the crown of the Empire State of the South. Georgia marches forward in the van of progress in a campaign against the arch enemy, tuberculosis. There is now being put into operation a mass attack throughout the State against this disease. For the first time a concerted, comprehensive and coordinated effort is being launched to eradicate or control tuberculosis within our borders. That this will be done in some measure, if the plan comes to full fruition, must be believed by the most skeptical. While it may be treading olympic heights to look for complete eradication of this scourge, the plan is commendable and is in the right direction.

By the coordinated resources of the Public Assistance Division of the State Welfare Department, the Georgia Tuberculosis Association and the State Board of Health, an attempt is to be made to reach and place under proper treatment, or supervision, every person with tuberculosis in the State who desires this assistance. It will be possible, therefore, for every patient requiring this service to have that most important requisite in the treatment of this disease—*24 hours bed rest every day*. Financial aid will be rendered if needed to secure the proper care and treatment.

Today some form of collapse therapy is applied to many cases of tuberculosis. The State Sanatorium at Alto will be utilized for this purpose when necessary. After the neces-

sary after-care and the pneumothorax refills are arranged for in their own community, the patients will be returned home. This permits a much faster and larger turn-over at the Sanatorium and offers the benefits of the institution to a larger number of applicants. Each individual making application to the State Sanatorium will be investigated by a physician either from the Georgia Tuberculosis Sanatorium or from the Division of Tuberculosis Control of the State Health Department, and the particular needs of that individual for care and treatment will be met.

The resources of the State for this campaign are many and potent. They are summarized as follows:

1. Medical and nursing supervision are available universally through the family physician, county health units (there are now 39 and soon there will be 50), 13 public health nurses in 13 additional counties, nine State district tuberculosis nurses, 18 State district advisory or consultant nurses, and a number of well-organized city and county tuberculosis associations.

2. Special treatment (lung collapse) may be obtained in 4 county sanatoriums, several tuberculosis association clinics, and through many physicians who have qualified themselves to perform this service, and in the State Tuberculosis Sanatorium.

3. A consultation service maintained by the State Board of Health through its division of tuberculosis control.

4. Assistance in planning relief, furnishing of medical care and payment for special treatment (lung collapse where required) by the State and county welfare departments in every county, and by the Georgia Tuberculosis Association through its many local organizations.

CHAMP H. HOLMES, M.D.

DO YOU WISH TO READ A PAPER BEFORE THE ASSOCIATION?

The preparation of a good paper on a medical subject is not an easy task, therefore it is not too early for those who contemplate seeking places on the scientific program at the next annual session of the Association, in Augusta, to give careful consideration to the subjects they plan to discuss.

Titles should be sent to Dr. H. Cliff Sauls, chairman, Medical Arts Bldg., Atlanta, or to the Secretary-Treasurer.

The next annual session of the Medical Association of Georgia will be held at Augusta, April 26-29, 1938.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

TYPHOID FEVER AS A PUBLIC HEALTH PROBLEM

In beginning we wish to thank the physicians of Georgia for their cooperation in the past and to ask for their aid in the future in fighting this dreadful disease.

Typhoid fever has been known since the earliest times. The first great step forward in our knowledge of this disease was through the work of William Budd, a young English physician working in London in 1853. His accurate and detailed observations have come to be one of the medical classics. His work on the epidemiologic phase of this disease still holds true today. The remarkable thing about his work is that it was done 26 years before the typhoid organism was discovered by Koch in 1880. Very little has been added to his knowledge by our modern workers. The reading of Budd's "Typhoid Fever" should be required of every physician.

The typhoid organism, the *B. typhosus* or *E. typhosus*, was first described by Koch. It is a gram-negative, motile, rod-shaped organism with definite cultural characteristics and agglutination reaction.

The source of typhoid fever is man, since he is the only animal that has the disease. Each case of typhoid represents a short-circuit from the intestine of an infected person to the mouth of a susceptible individual. The source of every infection is from an active case or a carrier. The typhoid carrier is a person who has had the disease and is discharging the typhoid organisms in urine or stool, sometimes both. The most important source of typhoid is the carrier. Upon recovery from the disease some patients, about 33 per cent, discharge the organisms for 2-3 weeks, 11 per cent for 8-10 weeks, and are known as convalescent carriers. Those who discharge organisms for a longer period and up to a lifetime are known as chronic carriers. The chronic carrier is our problem. All carriers should be discovered and educated as to the part they play in the life of the community and the special care they should take to prevent the infection of others. The best method of discovering carriers is the epidemiologic investigation of all cases, especially checking the stools of every case upon recovery. If the culture is negative, a recheck should be made on two successive days, should they prove negative the patient should be released from further restriction. If the culture is positive, the patient should be instructed as to what precautions to take in preventing the spread of this disease. The stools and urine of con-

valescent carriers should be checked at frequent intervals to determine whether they have become chronic carriers. A carrier should under no circumstances be allowed to work as a food handler, dishwasher, cook or dairy hand. The State Department of Health wants to cooperate in finding these carriers, and it is a challenge to every physician to find the source of infection of his case. The State Department of Health Laboratory is equipped to render an unsurpassed diagnostic service in the stool culture work.

Since 1920 there have been 8,373 deaths in Georgia from typhoid. We know that at least 10 cases occur for every death. This would represent 83,730 cases in the last 17 years. Since from 3-5 per cent of all persons recovering from the disease become carriers, we should have approximately 2,260 persons who have become chronic typhoid carriers since 1920. The incidence of the disease is rapidly declining but, in spite of the large amount of typhoid vaccine given, improved water supplies and better sanitation, we had 195 deaths in 1936, representing approximately 1,950 cases. This would represent 53 carriers being turned loose in our State in 1936 alone. These people are ignorant as to their condition, and it is up to the physician to inform them of their carrier state.

It has been said that "We live on a thin crust of civilization." This crust is composed of artificial immunization, our improved water supplies, modern sewage disposal systems, and supervision and pasteurization of milk supplies. The importance of stool examinations on all food handlers who give a history of the disease cannot be overstressed. Should a break occur in the purification of our water supply (and raw water is nearly always contaminated) we might be plunged into a major epidemic of this disease or one of the related diseases. In our rural areas, where we are having most of our typhoid at the present, conditions exist much as they have always been. We have poor sanitary conditions, open wells, surface privies, flies and no screens in the houses and, in addition, we have numbers of carriers. Large numbers of cases result from the visit of a carrier to a farm. The privy is used and a deposit of typhoid organisms made. These germs are washed into the well or carried into the house and deposited on food or in milk, to be eaten by a susceptible individual.

The physician must play a dual role in treating a patient with this disease; he should

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WOMAN'S AUXILIARY

OFFICERS 1937-1938

President—Mrs. Ralph H. Chaney, Forrest Hills, Augusta.

President-Elect—Mrs. Warren A. Coleman, Eastman.

First Vice-President—Mrs. H. G. Banister, Ila.

Second Vice-President—Mrs. J. Lon King, 223 Buford Place, Macon.

Treasurer—Mrs. W. A. Selman, 760 Penn Avenue, N. E., Atlanta.

Third Vice-President—Mrs. R. S. O'Neal, La-Grange.

Recording Secretary—Mrs. Cleveland Thompson, Millen.

Corresponding Secretary—Mrs. W. E. Matthews, Jr., 2804 Lombardy Center, Augusta.

Historian—Mrs. Clem Brannen, Moultrie.

ORGANIZATION

The Auxiliary is well into its fourteenth year. To repeat our many activities during this period of time would be unnecessary repetition as our reports have appeared annually in print.

It is sufficient to say that today we stand an organized body of nearly four hundred doctors' wives, conservative in our every undertaking, and subordinate in all of our activities to the organization we seek to serve, namely the Medical Association of Georgia.

We are proud of the confidence this organization places in us. It is through the auxiliary members that the Association, to a large extent, is "putting over" its health education program to the lay organizations.

It has been a privilege of the Auxiliary members to have a part in the education of nine medical students within a period of six years through our Student Loan Fund.

But aside from our educational and philanthropic undertakings the social side of Auxiliary work makes membership worth while for friendship is the basis upon which the organization is founded.

So to all doctors wives in Georgia, who are eligible to membership, and who have not yet joined, we extend a cordial invitation to join us this year. We will be glad to help you organize at any time you desire. As few as four can organize an Auxiliary, but even if this is impossible we will welcome you, individually, as members-at-large.

The Auxiliary should be the most attractive of all organizations to the wife of a physician, and each should consider it an honor to be a member of an organization which comprises 38 States and the District of Columbia, and claims as members over 16,000 doctors' wives.

MRS. WARREN A. COLEMAN,
President-Elect,
Chairman of Organization.

Ninth District

The Auxiliary to the Ninth District Medical Society held its semi-annual meeting recently at the State Sanatorium at Alto. It

met the same day as the society. Mrs. W. B. Schaefer, of Toccoa, president, presided over the Auxiliary session and Mrs. J. E. D. Isbell, of Toccoa, gave the devotional. Mrs. D. T. Rankin extended a welcome to the visitors and Mrs. C. J. Roper, of Jasper, responded.

Features of the program were a talk by Mrs. Ralph Chaney, of Augusta, State President, who outlined Auxiliary objectives; and an address by Dr. Hugh Bickerstaff, of the State Department of Public Health, who spoke on "Maternal Care and Child Hygiene."

Following their separate business and program meetings, the Auxiliary and the Society enjoyed an old-fashioned Georgia barbecue. The next meeting will be held in Commerce in March.

Barrow County

The Barrow County Auxiliary held its September meeting at the home of Mrs. Ernest R. Harris. Mrs. W. T. Randolph, president, presided. The following chairmen were appointed: Health Education, Public Relations and Hygeia, Mrs. Alex Russell; Jane Todd Crawford Memorial and Organization, Mrs. E. M. McDonald; Legislation and Health Films, Mrs. C. B. Almand; History and Research in Romance of Medicine, Mrs. W. L. Mathews; Press and Publicity, Mrs. E. R. Harris; Doctors' Day and Student Loan Fund, Mrs. Alex Russell and Mrs. E. M. McDonald.

Three new subscriptions to Hygeia were reported and the Auxiliary adopted the A.M.A. slogan, "Either a subscriber or responsible for a subscription to Hygeia." Mrs. McDonald and Mrs. Ross were appointed a committee to investigate naming the road from Jefferson to Athens the Crawford W. Long Highway.

Featuring the program Mrs. Russell talked on the Student Loan Fund, stressed the fact that the fund, eligible to only sons and daughters of Georgia physicians, is so important as ambitious boys and girls need the educational advantages and rural Georgia needs the physicians. Another feature was a talk by Mrs. E. M. McDonald on the Jane

Todd Crawford Memorial, the effort of the Auxiliary to memorialize the first woman to undergo an ovariectomy.

Fulton County

The Fulton County Auxiliary resumed work in September, after a summer of inactivity. Mrs. Stephen Brown, president, presided and presented as her objectives an increase in membership and fellowship; readiness to cooperate always with the Society in any of their entertainments; the presentation of a public health program and work toward better public relations; and the willingness to be guided by the advisory committee.

Committees for the year were read and Mrs. Mason Lowance, Program Chairman, presented Dr. E. L. Bishop, who talked interestingly on "Doctors' Hobbies."

Richmond County

Dr. Ralph Chaney spoke on "What Is Ahead of the Medical Profession" at the first fall meeting of the Richmond County Auxiliary held at the home of the new president, Mrs. C. M. Burpee, in Augusta.

The organization made plans for the annual benefit bridge party to be held on October 27 and voted to cooperate with the Junior League in putting a circulating library in the hospital and in the work the League plans this year at the West End Y.

Baldwin County

The first fall meeting of the Baldwin County Auxiliary was held recently at the home of Mrs. Richard Binion in Milledgeville, Mrs. Charles H. Richardson, president, presided.

Committee chairmen were appointed as follows: Mrs. H. D. Allen, Sr., Hygeia; Mrs. H. D. Allen, Jr., Membership; Mrs. E. W. Allen, Public Relations; Mrs. Sam Anderson, Scrap Book; Mrs. Richard Binion, Romance of Medicine; Mrs. R. E. Evans, Health Films; Mrs. C. B. Fulghum, Publicity; Mrs. J. I. Garrard, Health Education; Mrs. L. P. Longino, Doctors' Day; Mrs. John Oden, Jane Todd Crawford Memorial; Mrs. W. M. Scott, Legislation; Mrs. N. P. Walker, Student Loan Fund; Mrs. Otis Woods, Parliamentarian; and Mrs. Y. H. Yarbrough, Historian.

Correction

In discussing the proposed Presidents' Pins in the minutes of the recent State convention, which were published in the August Journal, it was stated that the price of the pins would not exceed \$50. The figure should have been \$5.

HYGEIA

Mrs. J. Lon King, Macon, Hygeia Chairman, has mailed letters to members as follows:

I wish to extend greetings and ask your cooperation in making this year the biggest one Hygeia has ever had.

As state chairman of Hygeia, I wish to place before each County President and the Hygeia chairman the necessity of keeping Hygeia before her members.

I do believe that Hygeia is being read more widely now than ever before. The laity are more anxious and more health-minded, because of magazines and newspaper publicity concerning the ailments of our generation.

Through Hygeia every phase of medicine or quackery is brought to the public.

It is our responsibility to place Hygeia, authorized and printed by the *American Medical Association*, illustrated in fine style, in places where people can read it.

We would suggest placing a subscription in all schools (white and colored) libraries, in offices of doctors and dentists.

A recent letter from F. V. Cargill, circulation manager of Hygeia, states that probably in December there will be the doctor's privilege of subscribing to Hygeia for only \$1.25 instead of \$2.50, the regular price for one year.

It is hoped that each chairman will feel the deepest urge to do her part in placing this authentic health magazine before the people of her town and city.

Remember, that in your programs on Hygeia try to use the articles in the magazine to the greatest advantage.

I trust as the year progresses our work for health will find new ground. Do it with Hygeia! Be a subscriber yourself! Be informed through Hygeia!

Call on me for anything that you may need in your work.

GRACE I. KING,
State Chairman of Hygeia.

TYPHOID FEVER AS A PUBLIC HEALTH PROBLEM

(Continued from page 557)

not only care for the sick, but should discover the source of infection, teach hygienic measures to the family, urge sanitary improvements and immunize the family and neighbors against the disease. The State Department of Health is ready to lend every possible aid: the laboratory for diagnosis; the epidemiologic staff to help discover the carriers; and the sanitary engineering staff to recommend sanitary improvements.

The greatest decline in the typhoid rate is in those counties having full-time county health officers. Here a close check is made on carriers, sanitary conditions are constantly under observation, and active immunization campaigns are carried out. This is a good

illustration of what can be done about our typhoid fever as a health problem.

Quoting Rosenau, "The cause, the source, the mode of transmission and prevention are well understood in theory and readily attainable in practice. Sanitation here finds its fruitful field, hygiene its useful lessons, and immunology its special application." How well this statement sums up the title "Typhoid Fever as a Public Health Problem."

DAVID M. WOLFE, M.D., *Ass't Chief Division of Epidemiology.*

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 Rosenau, Milton J.: Typhoid Fever, Preventive Medicine and Hygiene.
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 Osler, William: Principles and Practice of Medicine.
 Vaughn, Victor C.: Epidemiology and Public Health.

NEWS ITEMS

DR. ROBERT C. PENDERGRASS, Americus, was recently elected to membership in the American College of Radiologist.

DR. THOMAS W. COLLIER, formerly engaged in health work at Albany, has been transferred by the State Department of Public Health to Lyons where he is organizing the public health work in Montgomery and Toombs counties under the Ellis Health Law.

DR. T. F. ABERCROMBIE, Atlanta, director of the State Department of Public Health; and Dr. Guy G. Lunsford, director of county health work, were speakers on the program at a meeting of the DeKalb League of Women Voters in Decatur on October 1st.

THE FIFTH DISTRICT MEDICAL SOCIETY met at the Academy of Medicine, Atlanta, October 7th. Dr. H. Cliff Sauls, Atlanta, President of the Fulton County Medical Society, made the "Address of Welcome"; Dr. Geo. A. Traylor, Augusta, President of the Association, "Response to the Address of Welcome"; Dr. Geo. W. Fuller, Atlanta, associate professor of clinical surgery, Emory University School of Medicine, spoke on "Surgery in Syphilis of the Stomach"; Dr. Alfred Blalock, Nashville, Tenn., associate professor of clinical surgery, Vanderbilt University School of Medicine, "The Surgical Treatment of Certain Types of Heart Disease"; Dr. Wm. G. Hamm, Atlanta, visiting (plastic) surgeon, Piedmont, Georgia Baptist and Emory University Hospitals, "Observations on Secondary Repair of Harelip"; Dr. Paul H. Ringer, Asheville, N. C., physician Violet Hill Sanatorium, Asheville Mission Hospital, and past president of the Medical Society of the State of North Carolina, "The Evolution of the Treatment of Tuberculosis". Buffet supper was served. Officers re-elected for the ensuing year were: Dr. Olin S. Cofer, Atlanta, president; Dr. C. W. Strickler, Jr., Atlanta, vice-president; Dr. D. Henry Poer, Atlanta, secretary.

DR. J. R. GARNER, Atlanta, chief surgeon, Atlanta and West Point Rail Road Company, The Western Railway of Alabama and Georgia Rail Road, was a speaker on the program of the National Safety Congress and Exposition at Kansas City, Missouri, October

11-15. He spoke on "Fatigue in Its Relation to Accident Prevention".

THE STATE BOARD OF HEALTH announces the opening of its branch laboratories at Albany and Waycross. Physicians in the vicinity of either are urged to send their specimens to the nearest laboratory.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on October 7th.

The Southeastern Branch Society of the American Urological Association met at the Tutwiler Hotel, Birmingham, Alabama, November 5-6. Dr. J. R. Robertson, Augusta, is a member of the Executive Committee; Dr. Earl Floyd, Atlanta, is secretary-treasurer.

THE STAFF MEETING of the Grady Hospital, Atlanta, was held on October 12th. Cases reported were: "A Diagnostic Problem Concerned with Abdominal Tumor", Dr. W. S. Dorrough and Dr. Marvin A. Mitchell; "Adamantinoma", Dr. E. L. Bishop, Dr. Lester A. Brown and Dr. James King; "A Diagnostic Problem Concerning the Lung," Dr. E. A. Bancker, Jr. and Dr. C. C. Aven. Officers of the staff are: Dr. Dan C. Elkin, president; Dr. C. W. Strickler, Jr., secretary.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on October 12th. Dr. Julian K. Quattlebaum read a paper entitled, "Fusion of Injured Spine"; Dr. L. J. Rabhan reported a case, "Multiple Abscesses of the Kidney, Bilateral"; Dr. C. F. Holton gave a report on the Minimum Medical and Surgical Fee Schedule proposed by the Association.

DR. W. L. CHAMPION AND DR. MAJOR F. FOWLER announce the removal of their offices to Suite 408 Doctors' Building, 478 Peachtree Street, N. E., Atlanta. Practice will be limited to urology.

THE EIGHTH DISTRICT MEDICAL SOCIETY met at Valdosta on October 12th. Titles of papers on the scientific program were: "Tonsils and Their Diseases", Dr. Leo Smith, Waycross; "The Tuberculosis Problem—What is Being Done and What Should be Done to Solve It", Dr. H. C. Schenck, Atlanta; "Picture Demonstration of 'Jameson's Recession Muscle Operation—Phrenicectomy and Phrenic Crushing'", Dr. F. G. Eldridge, Valdosta; "Certain Phases of Emergency Accidents", Dr. B. G. Owens, Valdosta; "Address", Dr. Geo. A. Traylor, Augusta, president of the Association; "The Physician's Place in a Malaria Control Program", Dr. Justin Andrews, Atlanta; "Some Indications in the Diagnosis of Gallbladder Disease", Dr. K. C. Walden, Waycross. Dinner was served at the Daniel Ashley Hotel.

THE WARE COUNTY MEDICAL SOCIETY met at Hotel Ware, Waycross, on October 6th. Dr. Louis H. Oden, Jr., Blackshear, read a paper entitled, "The Raw Apple Diet in Infantile Diarrhea". Dr. J. E. Penland and Dr. W. D. Mixson, both of Waycross, entertained the members at dinner.

DR. W. L. BAZEMORE, Dr. W. C. Boswell, Dr. C. Hall Farmer, Dr. W. R. Golsan, Dr. Jno. I. Hall, Dr. A. M. Phillips, Dr. Raymond Suarez, Dr. Evelyn Swilling, and Dr. C. N. Wasden announce their re-

removal to the new Medical Arts Building, 553 Walnut Street, Macon. The building has just recently been completed and is equipped with modern conveniences.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met at the Harrison Hotel, Jefferson, on October 4th. Dr. M. B. Allen, Hoschton, spoke on "Sulfanilamide and Its Therapeutic Uses". Dinner was served.

THE STAFF MEETING of the Crawford W. Long Memorial Hospital, Atlanta, was held on October 14th. The program consisted of reports of committees, discussion of mortalities, and report of a case, "Postoperative Care", Dr. J. G. McDaniel; discussed by Dr. J. H. Byram and Dr. Linton Smith.

THE SECOND DISTRICT MEDICAL SOCIETY met at Albany on October 15th. Titles of scientific papers on the program were: "Gastric Symptoms in the Surgical Gallbladder", by Dr. H. M. McKemie, Albany; discussed by Dr. F. K. Neill, Albany. "Carcinoma of the Bladder", Dr. Edgar G. Ballenger, Atlanta; discussed by Dr. J. C. Keaton, Albany. "The Tuberculosis Problem in Georgia", Dr. H. C. Schenck, Atlanta. "The Physicians Place in a Malaria Control Program", Dr. Justin Andrews, Johns Hopkins University School of Medicine, Baltimore, Md. Dinner was served at the New Albany Hotel. Other speakers and visitors were: Dr. Geo. A. Traylor, Augusta; Dr. Grady N. Coker, Canton; Dr. Edgar D. Shanks, Atlanta, president, president-elect and secretary-treasurer of the Association, respectively. Dr. T. F. Abercrombie, Atlanta, director, State Department of Public Health.

THE DOCTORS' BUILDING, an annex to the Coleman Sanatorium, Eastman, was formally opened on October 7th. At the opening of the Doctors' Building, a bulletin was distributed by the Sanatorium showing the number of patients treated since the institution opened in 1930. The record showed that 2362 patients had been admitted and treated by Dr. Warren A. Coleman and his associate, Dr. H. M. Tolleson.

THE BULLOCH-CANDLER-EVANS COUNTIES MEDICAL SOCIETY met at Statesboro on October 13th. The physicians of Statesboro were hosts to the members of the Society.

DR. J. A. CORRY, Barnesville, attended the St. Louis session of the Interstate Postgraduate Medical Association of North America, October 18-22.

DR. D. T. RANKIN, Alto, was elected chairman of the State Board of Medical Examiners; Dr. J. W. Palmer, Ailey, vice-chairman.

DR. M. M. BYRD was elected chairman of the board of directors of the Valley Hospital, West Point; Dr. Hugh McCulloh, Jr., secretary-treasurer; other members of the board are; Dr. J. M. Clack, Dr. Wm. L. Cowles, Dr. W. L. Marshall, Dr. C. O. Williams.

THE ANNUAL CONFERENCE of Secretaries of Constituent State Medical Associations will be held at the offices of the American Medical Association, Chicago, November 19-20. Dr. Edgar D. Shanks, Atlanta, will represent the Medical Association of Georgia as

secretary; Dr. L. Minor Blackford, Atlanta, will represent the Journal of the Medical Association of Georgia as associate editor.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on October 26th. Dr. C. M. Burpee, Augusta, read a paper entitled, "The Treatment of Gonococci Infections of the Genital Tract in Girls"; the discussion was led by Dr. E. N. Gleaton and Dr. Ruskin King, both of Savannah; Dr. Walter E. Brown, Savannah, reported a case, "Unusual Tumor of the Ovaries, Bilateral". Refreshments were served.

THE STAFF MEETING of St. Joseph's Infirmary, Atlanta, was held on October 26th. Dr. Wm. Perrin Nicolson, Jr., reported, "The Rectal Use of Evipal as a Basal Anesthetic".

DR. HARRY T. HARPER, JR., formerly of Eastman, announces his removal to Augusta and association with Dr. J. H. Butler and Dr. Irvine Phinzy in the practice of internal medicine, Suite 415-21 Southern Finance Building, Augusta.

THE AMERICAN COLLEGE OF SURGEONS announces its approval of hospitals in the various cities of Georgia as follows:

- Albany*—Phoebe Putney Memorial Hospital.
- Alto*—Georgia State Tuberculosis Sanatorium.
- Athens*—Athens General Hospital.
- Atlanta*—Albert Steiner Clinic for Cancer, Crawford W. Long Memorial Hospital, Georgia Baptist Hospital, Grady Hospital, Henrietta Eggleston Hospital for Children, Piedmont Hospital, St. Joseph's Infirmary, United States Penitentiary Hospital, Veterans' Administration Facility Hospital, (Emory) University Hospital.
- Augusta*—University Hospital, Veterans' Administration Facility Hospital, Wilhenford Hospital for Women and Children.
- Columbus*—City Hospital.
- Cuthbert*—Patterson Hospital.
- Decatur*—Scottish Rite Hospital for Crippled Children.
- Eastman*—Coleman Sanatorium.
- Fort Benning*—Station Hospital.
- Fort McPherson*—Station Hospital.
- Fort Oglethorpe*—Station Hospital.
- Gainesville*—Downey Hospital.
- Macon*—Macon Hospital, Middle Georgia Sanatorium, Oglethorpe Private Infirmary.
- Milledgeville*—Baldwin Memorial Hospital.
- Millen*—Millen Hospital.
- Rome*—Harbin Hospital, McCall Hospital.
- Savannah*—Central of Georgia Railway Hospital, Charity Hospital, St. Joseph's Hospital, United States Marine Hospital, Warren A. Candler Hospital.
- Thomasville*—John D. Archbold Memorial Hospital.
- Valdosta*—Little - Griffin - Owens - Saunders Private Hospital.
- Warm Springs*—Georgia Warm Springs Foundation.
- Waycross*—Atlantic Coast Line Hospital, Ware County Hospital.

THE CHATTOOGA COUNTY MEDICAL SOCIETY met on October 13th. Dr. Grady N. Coker, Canton, president-elect of the Association, spoke on "The Future Plans of the Association".

DR. J. W. PALMER, Ailey, secretary-treasurer of the Association of Seaboard Air Line Railway Surgeons, announces that the fall meeting of the Association will be held at the McAllister Hotel, Miami, Florida, November 16-18.

DR. AND MRS. D. T. RANKIN, Alto, entertained the members of the Habersham County Medical Society and Auxiliary in their home on October 14th.

THE STAFF MEETING of Emory University Hospital was held on November 1st. Titles of case reports and discussions were: "Sciatica and Spinal Cord Lesions" by Dr. E. F. Fincher and Dr. Walker; "New Aids in Laboratory Diagnosis"; "Automatic Tissue Technic"; "Photoelectric Hemoglobin Estimations", Dr. Parker; "Diagnosis of Brucellosis"; "Cultivation of M. Tuberculosis", Dr. Gambrell; "Heterophile Concentration Test", Dr. Roy R. Kracke and Mrs. Garver.

OBITUARY

Dr. Samuel Wilson, Yatesville; member; University of Georgia School of Medicine, Augusta, 1891; aged 71; died at his home of apoplexy on September 28, 1937. He was a native of Gainesville and had practiced medicine in Upson and adjoining counties for more than forty-five years. Dr. Wilson was a prominent physician and a useful citizen. He was continuously ready and active in devoting his time and talent to the best interests of his county and State. He was past master of Yatesville Lodge 407, F. & A. M. and the oldest deacon in the Yatesville Baptist church. Surviving him are his widow, two daughters, Mrs. G. A. Moore, Washington, D. C., and Mrs. P. P. Bush, Akron, Ohio; three sons, Samuel H. Wilson, Griffin; James E. and Robert A. Wilson, Washington, D. C. Rev. J. S. Winn and Rev. H. E. Gaddy, both of Macon, conducted the funeral services from the Yatesville Baptist church. Burial was in the churchyard.

Dr. R. W. Bryant, Moultrie, Emory University School of Medicine, Emory University, 1895; died at his home on September 19, 1937. He was devoted to the practice of medicine and gave years of his best efforts to help and relieve the sick. He was public spirited and a good citizen. Burial was in Salem churchyard.

Dr. Leonard E. Welch, Albany; member; University of Pennsylvania School of Medicine, Philadelphia, Pa., 1893; aged 71; died at his home on October 3, 1937. He was born and reared in Albany and spent his life there, except, for a few years spent in Savannah where he practiced medicine; the balance of his professional work was in Dougherty and adjoining counties. Dr. Welch was prominent in business, educational and social affairs of his city. He was an excellent citizen and held in high esteem by hundreds of acquaintances. Surviving him are his widow. Funeral services were

conducted from St. Paul's Episcopal church by Rev. H. S. Cobey. Members of the Dougherty County Medical Society were honorary pallbearers. Interment was in the city cemetery.

Dr. James Milton Smith, Jr., Cochran; member; University of Georgia School of Medicine, Augusta, 1933; aged 28; died at his home on October 1, 1937. He was a native of College Park and moved with his parents to Cochran when twelve years of age. After he graduated from Cochran High School, he studied three years at Mercer University, Macon, then began the regular course in medicine at Augusta. During his summer vacations he served in a hospital at Long Island City, N. Y., worked with Dr. Carl W. Lupo, Brooklyn, N. Y.; intern at Oglethorpe Infirmary, Macon, and at the North Carolina Baptist Hospital, Winston-Salem, N. C. Later he practiced medicine at Gordon. When he returned to Cochran and associated with his father, Dr. J. M. Smith, he was appointed city physician. Dr. Smith was a member of the First Baptist church. Surviving him are his parents, Dr. and Mrs. James M. Smith, Cochran; three sisters, Mrs. Birdie Neal, Mrs. J. E. Niemeyer and Miss Christine Smith, all of Cochran; two brothers, B. F. Smith, Cochran, and H. B. Smith, Montgomery, Ala. Funeral services were conducted from the First Baptist church by Rev. S. L. Lamm and Rev. W. M. Haywood.

Dr. Charles Nelson Howard, Cusseta; University of Georgia School of Medicine, Augusta, 1888; aged 69; died at his home on October 12, 1937. He was a native of Cusseta. His father practiced medicine there a number of years before his death. Dr. Howard received his early literary education in Cusseta, and after graduating in medicine took postgraduate study at the New York Polyclinic Medical School and Hospital. He represented Chattahoochee county in the General Assembly of Georgia in 1923-24, 1925-26, 1927-28, 1929-30, 1931-32 and was re-elected in 1936 to serve in 1937. Served as State senator in 1933-34, was mayor of Cusseta for two terms; a member of the Knights of Pythias and Baptist church. Surviving him are his widow, two daughters, Mrs. D. B. Mitchell and Mrs. W. J. Long, both of Columbus. Funeral services were conducted from the home by Rev. Lee Bivins. Burial was in Cusseta cemetery.

Dr. John H. Conway, Atlanta; University of Georgia School of Medicine, Augusta, 1884; aged 81; died at a private hospital in Atlanta on October 7, 1937. He was born and reared in Leesburg and moved to Atlanta about fifty years ago. Dr. Conway was a useful citizen and a member of the Battle Hill Masonic Lodge and the Methodist church. Surviving him are four daughters, Mrs. F. B. Eaves, Mrs. C. C. Crosswell and Mrs. P. T. Gunter, all of Atlanta, and Mrs. L. J. Gray, Decatur; three sons, H. H. Conway, Chicago; H. G. Conway, Nashville; and R. H. Conway, Atlanta. Rev. Irby Henderson conducted the funeral services from the Park Street Methodist church. Interment was in West View cemetery.

UNTIMELY DEATH OF DR. JAMES M. SMITH, JR.

The sad and untimely death of Dr. James M. Smith, Jr., which occurred last Friday, October 1st, has cast a shadow of gloom over the entire town and vicinity. He had been in ill health for a number of months and his death was not unexpected.

Born in College Park, Ga., August 20th, 1909, he moved to Cochran with his parents, Dr. and Mrs. J. M. Smith, Sr., while just a lad. At twelve years of age he joined the Baptist church here where his father was, and is still a deacon.

He possessed an unusually bright and brilliant mind, besides being of a happy, jovial disposition, much liked and admired by friends and the public at large.

After graduating from the Cochran High School in 1927, he felt an inclination to follow his father's profession, so he studied for three years at Mercer University in Macon as a student of Pre-Med. During this time he was assistant record and information clerk at the Macon Hospital. Later he graduated from the University of Georgia Medical College at Augusta in 1933. He belonged to the Theta Kappa Psi Medical fraternity.

During the summer vacations while attending medical college he worked one summer in the Veterans Hospital at North Port, Long Island, one summer with Dr. Carl Lupo at Brooklyn, N. Y., and served as Junior Intern at Oglethorpe Infirmary in Macon. After graduation he was an intern at the North Carolina Baptist Hospital at Winston-Salem, N. C. He later practiced medicine at Gordon, Ga., and was looked upon as being one of the best and most up-to-date doctors in that section. He came to Cochran last November to become associated with his father in the practice of medicine, and was soon awarded the practice of city physician, and otherwise enjoyed a wide and lucrative practice until his health necessitated his retiring.

He was a member of the Ocmulgee Medical Association, the Georgia Medical Association, and the American Medical Association.

Funeral services were held from the First Baptist church Saturday afternoon at four o'clock with the pastor, Rev. S. L. Lamm, officiating. Assisting were Rev. W. M. Haywood, pastor of the Methodist church, and Rev. F. B. Asbell, a family friend. Many beautiful tributes of praise were paid his memory, and his death is being mourned as an incurable grief. He was just in the prime of young manhood, and had every favorable encouragement in his profession until he was stricken with his sickness which he was not able to overcome.

A large concourse of friends and relatives followed the remains to its last resting place, and final rites were held at the graveside. The display of lovely flowers were all beautiful expressions of the tender sympathy of many friends and loved ones.

T. W. Fisher & Son were the funeral directors in charge of arrangements.

Surviving are his parents, and three sisters, Mrs. Birdie Neal, Mrs. J. E. Niemeyer and Miss Christine Smith, of Cochran; two brothers, Mr. H. B. Smith, of Montgomery, Ala., and Mr. B. F. Smith, of Cochran,

besides two nephews, Cecil Neal and Broughten Smith, Jr.

The pallbearers were selected from those near his age as follows: Auburn Webb, T. W. Fisher, Jr., Johnnie Floyd, Willett Reeves, Earl Laine, Henry Duggan, C. L. Toole, Jr., and Flemming Sommers.

The Journal joins friends in extending words of condolence to the bereaved family.

—The Cochran Journal, Cochran, Ga., Oct. 7, 1937.

BOOK REVIEWS

Physiology in Health and Disease (2nd Edition), by Carl J. Wiggers, M.D., Professor of Medicine in the School of Medicine of Western Reserve University, Cleveland, Ohio. Lea & Febiger, Philadelphia. Octavo, 1,124 pages. \$9.00.

There is evidence of painstaking revision in this second edition, which follows two years after the first. In many instances where there is little change in the text, it is rendered more authoritative by increased bibliography. In spite of an enlarged index, the book has been shortened by thirty pages. There are several new illustrations and diagrams, and some have been omitted. The section on the physiology of motion has been almost doubled in size, with a new chapter devoted to cardiac and smooth muscle. The discussion of the autonomic nervous system has been elaborated. The section on blood and blood-forming organs has been revised for better presentation without any marked change in content. The term anoxia is substituted for anoxemia, which, in this edition, is restricted to oxygen deficit in the blood. Except for minor items, such as cardiac asthma, the section on the heart and circulation is altered chiefly by rearrangement. The discussion of the digestive system has not been appreciably changed. The problem of the water-balance is presented in simpler form and the lymph is handled more briefly. The section on vitamins has been almost completely rewritten, and includes several disorders formerly handled under the heading of mineral metabolism. The section on endocrine organs and reproduction has been split into two, with a new chapter on the humoral control of functions by hormones.

MCCLAREN JOHNSON, M.D.

Local Anesthesia, by Arthur E. Hertzler, Prof. of Surgery in the University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; St. Luke's Hospital and St. Mary's Hospital, Kansas City, Mo., and the Provident Hospital, Kansas City. Sixth edition. 284 pages. 142 illustrations. Price \$5.00. The C. V. Mosby Co., 3525 Pine Boulevard, St. Louis, Mo.

This book is packed full of facts as to the use of local, intravenous and spinal anesthetics; it names the drugs employed and gives the technic of administration in all operations, minor and major. It is a storehouse of experiences that have proved successful and a splendid reference book that should be in every doctor's library. Being in its sixth edition evidences its value and the constant demand for it.

T. C. DAVISON, M.D.

Health Education of the Public. A Practical Manual of Technic. By W. W. Bauer, B.S., M.D., Director, Bureau of Health and Public Instruction, American Medical Association; Associate Editor of *Hygeia*, The Health Magazine; and Thomas C. Hull, Ph.D., Director, Scientific Exhibit, American Medical Association; Associate Professor of Bacteriology, University of Illinois, College of Medicine. 227 pages, with 39 illustrations. Price, \$2.50. Philadelphia and London: W. B. Saunders Company, 1937.

In a former age the doctor wore a long gown and a fur cap and set great store by his mysterious knowledge. More recently, in the memory of many, he substituted a frock coat and a stovepipe. The modern doctor has abandoned all claims to mystery and theoretically everyone of us wishes to have the layman educated in matters of health; educated at least to the point where he will have periodic health examinations, where he will obey the basic laws of hygiene, where he will consult a physician in the early stage of every illness and where he will not squander his funds in a necessarily fruitless chase of health. And yet the modern doctor still carries more than a trace of the medieval reserve: he still abhors in the good old fashioned way all publicity seeking on the part of the individual physician, and is even loath to condone publicity seeking on the part of the profession. However, whether we like it or not, the medical profession must have a better press. If we do not there is no telling what is going to become of us at the hands of the lawmakers.

Furthermore, the word "doctor" means one who is well educated, and it is therefore incumbent upon us to pass on some of this education.

And we also owe it to the public to have proper laws passed for the protection of the general health of the public. The only way we can secure the passage of such laws is by securing the support of the public, and the only way we can secure such support is through the education of the public.

Each unit of organized medicine should have as a guide at least one copy of "Health Education of the Public."

L. MINOR BLACKFORD, M.D.

Operative Surgery, by J. Shelton Horsley & Isaac A. Bigger. Fourth Edition. C. V. Mosby Company 1937. Sixteen years ago Dr. Horsley published the first edition of *Operative Surgery*. This year the fourth edition is published in two volumes with a co-author and contributions by Dr. C. C. Coleman, Austin I. Dodson, Ronald M. Faulkner and John S. Horsley, Jr. Many new operative procedures are described which have not heretofore been published in a book, but none has been recommended which does not seem sound. The methods described are those which either have been actually used by the author who writes of them or which seem to him to be the best for the lesion under consideration.

Particular stress has been laid upon the preservation of physiologic function and the interpretation of the biologic processes that follow surgical operations. It is not to be considered, however, as a collection of monographs on surgical subjects nor as a general

surgical textbook which treats the etiology, symptoms, prognosis, diagnosis and treatment. It is truly an operative surgery which deals entirely with the methods of choice, indications, limitations, dangers, and specific technic of surgical operations. It is a most excellent book for the practicing surgeon.

EDGAR BOLING, M.D.

Personal Hygiene, by C. E. Turner, M.A., Dr.P.H., 1937, The C. V. Mosby Company. Price \$2.25. The author has prepared a book primarily for instructors in personal health, for which purpose it serves admirably. He has written in an easily understandable manner and included many very good illustrations. He covers in a general way Human Physiology and gives many helpful suggestions on the proper care of one's body as well as a few early signs and symptoms of the more common diseases. He also makes an effort to correct many of the more common medical superstitions.

Such a book can be highly recommended as a part of the library for teachers in public schools, colleges, and universities as well as laymen who are interested in maintaining good health.

PHILIP H. NIPPERT, M.D.

A RESOLUTION

WHEREAS, Senate Joint Resolution 188, introduced in the Senate of the United States on July 28, 1937, by Senator J. Hamilton Lewis of Illinois, proposes to federalize the medical profession of the nation, making every licensed physician and surgeon a civil officer and subject to prosecution and penalization in the Federal Courts for special causes enumerated in the Resolution; and

WHEREAS, Such a proposal, if approved by Congress, would be class legislation and contrary to the principles of constitutional government; and

WHEREAS, The plan would lead to a communistic and socialistic government, which is un-American and unworkable; and

WHEREAS, Such plans are now in operation in certain foreign countries, where it has been shown that they do not work for the benefit of the people; indeed, the morbidity and mortality rates have increased in those countries since the plans have been in effect; and

WHEREAS, The best medical service in the world today is available, and is rendered daily, to the citizens of the United States under our present system of practice, where morbidity and mortality rates have shown a gradual decrease; and

WHEREAS, All of our states, with their various counties, are now reinforcing their welfare agencies, in cooperation with the medical profession, to better serve their needy; and

WHEREAS, Conditions vary in different states and different areas of the same state, and should be handled locally through the cooperation of physicians, county and municipal officials, and state welfare agencies; and

WHEREAS, The medical profession of Georgia is working constantly, without thought of material reward, to the end that proper facilities will be provided

for the care of all people who need and deserve aid, and for the betterment of public health; therefore be it

RESOLVED, by the Council of the MEDICAL ASSOCIATION OF GEORGIA, That Senate Joint Resolution 188 is inimical to the best interests of the people, and its adoption would result in much confusion in the rendition of medical care as well as great and unnecessary expense to the taxpayers; and, be it further

RESOLVED, That copies of this resolution be forwarded to the President of the United States, to Senator J. Hamilton Lewis of Illinois and to each Senator and Representative in Congress from Georgia.

FIFTH ANNUAL SCIENTIFIC MEETING OF GEORGIA PEDIATRIC SOCIETY

DECEMBER 9, 1937

ATLANTA

AFTERNOON SESSION

(Biltmore Hotel)

12:45 P. M.—Luncheon.

1:45 P. M.—Scientific Session.

I. *Acute Laryngotracheobronchitis* — Jos. Brenne-
mann, M.D., Professor of Pediatrics, University of
Chicago; Chief of Staff, Childrens' Memorial Hospital,
Chicago, Ill.

II. *Immunization Against Common Infections of
Childhood*—Ralph S. Muckenfuss, M.D., Director,
Department of Health, Bureau of Laboratories, New
York City.

III. *Endocrine Problems in Juvenile Diabetes* —
Priscilla White, M.D., Physician at New England
Deaconess Hospital; Instructor in Pediatrics, Tufts
College Medical School, Boston, Mass.

IV. *Bronchial Obstruction in Infancy* — Paul H.
Holinger, M.D., Attending Bronchoscopist, Childrens'
Memorial Hospital; Surgeon in Charge of Peroral En-
doscopy, St. Luke's Hospital; Attending Bronchoscop-
ist, Research and Educational Hospital of the Univer-
sity of Illinois, Chicago, Ill.

Discussion—Jos. Brennemann, M.D.

EVENING SESSION

(Academy of Medicine, 38 Prescott St., N. E.)

7:30 P. M.—Scientific Session.

I. *Address of Welcome* — H. Cliff Sauls, M.D.,
President of Fulton County Medical Society.

II. *The Acute Abdomen in Childhood*—Jos. Bren-
nemann, M.D. Introduction: W. A. Mulherin, M.D.,
Augusta, Georgia.

III. *Recent Problems in Juvenile Diabetes*—Pris-
cilla White, M.D. Introduction: M. Hines Roberts,
M.D., Atlanta, Georgia.

IV. *Atelectasis and Bronchiectasis*—Paul H. Hol-
inger, M.D. Introduction: Howard J. Morrison,
M.D., Savannah, Georgia.

Discussion—Jos. Brennemann, M.D.

V. *Virus Infections of the Central Nervous Sys-
tem*—Ralph S. Muckenfuss, M.D. Introduction: T.
F. Davenport, M.D., Atlanta, Georgia.

GEORGIA RADIOLOGICAL SOCIETY TO BE ORGANIZED

At the International Congress of Radiology which
was held in Chicago during September, a group of

Georgia radiologists met and organized the Georgia
Radiological Society.

The following officers were elected for the first year:

Dr. J. J. Clark, Atlanta, President.

Dr. W. F. Lake, Atlanta, Vice-President.

Dr. R. C. Pendergrass, Americus, Secretary-Treas-
urer.

It was decided to hold the first organization meeting
in Atlanta on Saturday, November 27th. This is the
date of the Tech-Georgia football game, and the meet-
ing will be held Saturday morning at the Academy of
Medicine, at 38 Prescott St. The purpose of the first
meeting is principally for organization and the mapping
out of future plans. This organization will comprise
all men interested in roentgen diagnosis, roentgen
therapy and radium therapy, of whom there are ap-
proximately fifty in the state. These men have all re-
ceived invitations from the secretary, Dr. Pendergrass.
In case any have been overlooked this may be con-
sidered an invitation to attend the coming meeting in
Atlanta.

Practically every state in the union has a radiological
society and it has been found very beneficial not only
to the members who are interested in radiology, but
also to the physicians who are interested in this subject
not as a specialty. Any physicians who desire to at-
tend, and who also wish to attend the Tech-Georgia
football game, will please send their checks to Dr. J. J.
Clark, 218 Doctors Building, Atlanta, and he will
secure the best tickets possible.

RANDOLPH COUNTY MEDICAL SOCIETY

Randolph County Society's members paid
their 1938 dues to THE MEDICAL ASSOCIA-
TION OF GEORGIA September 28, 1937, thus
assuring themselves the satisfaction of being
first in a great organization in a great State.

There are many fine county medical socie-
ties in Georgia, but all are measured by the
activity of their members. Regular meetings
with free and frank discussion of problems,
both local and State, are desirable and neces-
sary if progress is made.

Dues may be paid any time during the
year, but there are certain rules which govern
medical defense and subscription to THE
JOURNAL. During the past year two members
whose dues were in arrears applied for medical
defense. Needless to say, it was embarrassing
to all concerned, including the officers of the
Association, when the records revealed the
facts and the rule had to be followed.

Congratulations to Randolph County
Medical Society, and to all other medical
societies actively engaged in furthering the
principles of organized medicine.

POSTGRADUATE SYMPOSIUM
GYNECOLOGY, OBSTETRICS
AND PEDIATRICS

Duke University Medical School and Duke Hospital, Durham, N. C., announce a Post Graduate Symposium on Gynecology, Obstetrics and Pediatrics, to be given November 11, 12 and 13, 1937. All physicians in North Carolina and the surrounding states are cordially invited to attend. The following speakers have consented to participate in the Symposium: Dr. C. A. Aldrich, Associate Professor of Pediatrics, Northwestern University Medical School; Dr. Horton Casparis, Professor of Pediatrics, Vanderbilt Medical School; Dr. Willard Richardson Cooke, Professor of Obstetrics and Gynecology; University of Texas Medical School; Dr. Julius Hess, Professor of Pediatrics, University of Illinois Medical School; Dr. Howard Francis Kane, Professor of Obstetrics and Gynecology, George Washington University Medical School; Dr. Foster Standish Kellogg, Harvard Medical School; Dr. George W. Kosmak, Editor, American Journal of Obstetrics and Gynecology; Dr. Esther L. Richards, Associate Professor of Psychiatry, Johns Hopkins Medical School; and Dr. Charles Hendee Smith, Professor of Pediatrics, New York University Medical School. Acceptance of several others are pending.

"BENZEDRINE SULFATE" IN ENURESIS

Molitch and Poliakoff (*Arch. Pediat.*, 54:499, Aug., 1937) recently investigated the effect of "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.) in enuresis.

Twenty-two nightly offenders, from 9 to 17 years old, were isolated and first given inert placebos. Eight boys, or 36 per cent, remained "dry" with this psychotherapeutic treatment. Those who continued "wet" were given "Benzedrine Sulfate" in a 2.5 mg. dose, increased where necessary to as high as 20 mg. Two unstable children failed to respond to treatment, even when the dosage was greatly increased.

Of the 12 boys who remained "dry" with "Benzedrine Sulfate" eight wet their beds the first night placebos were substituted. Two weeks after the discontinuance of therapy, whether with "Benzedrine" or placebo, all the boys had reverted to former habits. Insomnia was the only unfavorable reaction observed, and this was easily checked by decreasing the dose. Urinalysis remained negative throughout.

"Benzedrine Sulfate" is of apparent value in certain cases of enuresis. The authors suggest that the dose be decreased and eventually eliminated when night continence is established.

ARSENIC AND ITS MEDICINAL VALUE

The peasants of Styria, a mountainous Austrian province, indulge in the strange practice of arsenic eating. Styrian spring waters and the soil itself are purposely ingested in quantities which are said to contain as much as eight grains of the drug, and such doses are

often taken several times each week. One who is acquainted with the action of arsenic would expect severe poisoning to result, but on the contrary the arsenic eaters apparently derive a tonic effect.

The physician who prescribes arsenic cannot be so oblivious to its toxicity, but fortunately the drug, in certain newer compounds, may be administered with little danger of intolerance. Carbarsone, Lilly, is such a preparation which during its broad acceptance as an amebicide has been unusually free of toxic properties.

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA

DEVOTED TO THE WELFARE OF THE MEDICAL ASSOCIATION OF GEORGIA
PUBLISHED MONTHLY under direction of the Council

Volume XXVI

Atlanta, Ga., December, 1937

Number 12

TREATMENT OF OSTEOMYELITIS*

Using Bipp and Autogenous Vaccine

MARTIN T. MYERS, M.D.†
Atlanta

In presenting this paper I wish to report the progress of a treatment that I have used during the past five years on a number of selected patients at Grady Hospital. The method is the combination of bismuth-iodoform-paraffin pack, known as Bipp, and the use of autogenous vaccine prepared from cultures obtained from the infected areas at the time of the operation. Cases of acute and chronic osteomyelitis have been treated by this method and the results have been pleasing. This treatment is being used extensively today with good results.

The treatment of osteomyelitis has varied during the past years. During the World War the Carrel-Dakin method of treatment was practiced extensively by many armies because of its effectiveness in clearing up dirty infected wounds due to high explosives, shells and shrapnel. Shortly after the war, Orr advocated aseptic vaseline gauze packs, immobilization and infrequent dressings for the treatment of this condition. Baer's treatment, in which he used maggots, has brought forth a few successful reports, while bacteriophage therapy shows some interesting results. Many surgeons have reported favorable results with the use of the picric acid-calcium carbonate treatment of Stewart.

Bipp is not new, as it was used by the late Sir Robert Jones, who employed it in the form of paste by which he was able to demonstrate the direction of sinus tracts. Opaque to roentgen-ray, one could use it in demonstrating the tract, but being in paste form it was not possible to remove entirely the whole amount, as small amounts would solidify and



CASE 1. Four years after operation. Entire shaft of bone regenerated, distance of three inches. Slight bowing of knee joint. Normal range motion.

appear as foreign bodies. It was soon found that the paste could be incorporated in gauze similar to the vaseline gauze pack, packed into the operative wound and be removed entirely later.

"Osteomyelitis is brought about by the deposition of isolated organisms or clumps of organisms, or by fragments of clumps, primarily or secondarily infected with organisms circulating in the blood stream derived from some primary lesion. Infectious material is deposited in various points of the bone circulation and localizations of the fixation points are usually associated with accidents to the local bone circulation, which facilitates the blocking and arrests the emboli around these fixation points, and from them foci of acute osteomyelitis develop. The bacteria reach the interior of the bones through the nutrient artery and the periosteal vascular systems, from which foci of osteomyelitis develops." In the treatment of osteomyelitis by the use of vaccines, it is my opinion that their use facilitates the treatment by early cleaning up the infection, by the use of an

†Visiting orthopedist, White Unit, Grady Hospital, Atlanta.



CASE 2a. Entire shaft of tibia removed. Bipp pack in tibial trough on left. Right, early evidence of destruction of tibia.

CASE 2b. One year later shows regeneration of tibia. On right arrested growth due to closing of the periosteal tube. Left shows extension of bony growth across gap which was following operation.

autogenous vaccine along with the operative treatment that is employed. In as much as it is quite well understood that osteomyelitis is a bacterial infection, whether the bacteria are introduced from a focus within the body, as many cases have been proved to be, or produced through trauma to the soft tissue and bone in compound fractures. It is easy to remove at operation the broken down bony structure due to the bacterial organisms, but it is impossible to remove each and every organism that we know is present within the medullary and cortical structures of the bone; to remove these an autogenous vaccine is administered to build up the immunity of the patient. At the same time we are combating a localized destruction by using an aseptic and antiseptic aid since the make up of Bipp is principally bismuth iodide, which gives a very highly concentrated antiseptic solution of iodine, which locally is very destructive to bacterial organisms. By using the vaccine, after first testing by intradermal injection, we are able to use this vaccine in increasing doses subcutaneously at intervals of two to three days, providing the general reaction is not too great and the patient is not severely upset through its administration. During the

early use of the vaccine there is an increase in the discharge about the pack in the infected area. This discharge is at first profuse and consists of a purulent hemorrhagic serum which later becomes a clear watery serum which finally stops. The edges of the incised area begin to granulate early and remain clean. The pack is allowed to remain in a wound for an unlimited period of time; one case reported was for a period of nine months. The usual length of time varies between six and eight weeks at which time a general anesthetic is given and the pack is removed as are the necrotic debris and sequestra. Occasionally it is necessary to repack the area with a fresh pack, but the majority of wounds are found clean and regeneration of bone continues unmolested. The patient is allowed to remain at the hospital for several days following the operation during which time his temperature drops to normal and the general condition is improved. After this the patient is encouraged to begin early ambulatory exercises by using crutches and outdoor walking in order to regain normal strength. The patient should begin motion of the joints at an early date in order to preserve and strengthen the general muscular tone, provided the infec-



CASE 2c. Two years later photograph shows complete solid bony growth. Patient walks with short leg brace.

tion has not involved the joints near the original infection.

In those patients in whom there has been removal of a considerable amount of bone, and there is a possibility of a deformity resulting, a light cast or a posterior splint is applied in order to prevent such deformity or fracture. In patients with less than 50 per cent of a shaft of the bone removed, no splinting is done. I believe it is more advantageous to allow the patient to have use of the normal limb in a reduced degree rather than putting at absolute rest that limb. In this way healing is promoted more rapidly and the patient is able to use more of his natural strength than if he were obliged to wear a heavy cast, which would prevent him from moving freely about and attempting to maintain his normal strength.

Dressings of the wound are made only when there is an oozing on the outer bandage or the patient complains of an uncomfortable feeling about the dressing. On reapplying sterile dressings, the edges about the packing are touched with iodine, no effort being made to loosen the pack which occasionally is beginning to be thrown out by the granulating tissue from beneath. The edges of the wound are clean, and granulating and do not bleed

freely. Dressings are usually changed at intervals of ten days to two weeks. At the end of six to eight weeks an x-ray film is made to determine the presence of sequestra that may be present and if necessary the patient is admitted to the hospital and, under general anesthesia, the pack and sequestra are removed and the area permitted to granulate and fill in with healthy tissue.

A brief outline of the methods and technique of the operative procedure is as follows:

Preliminary

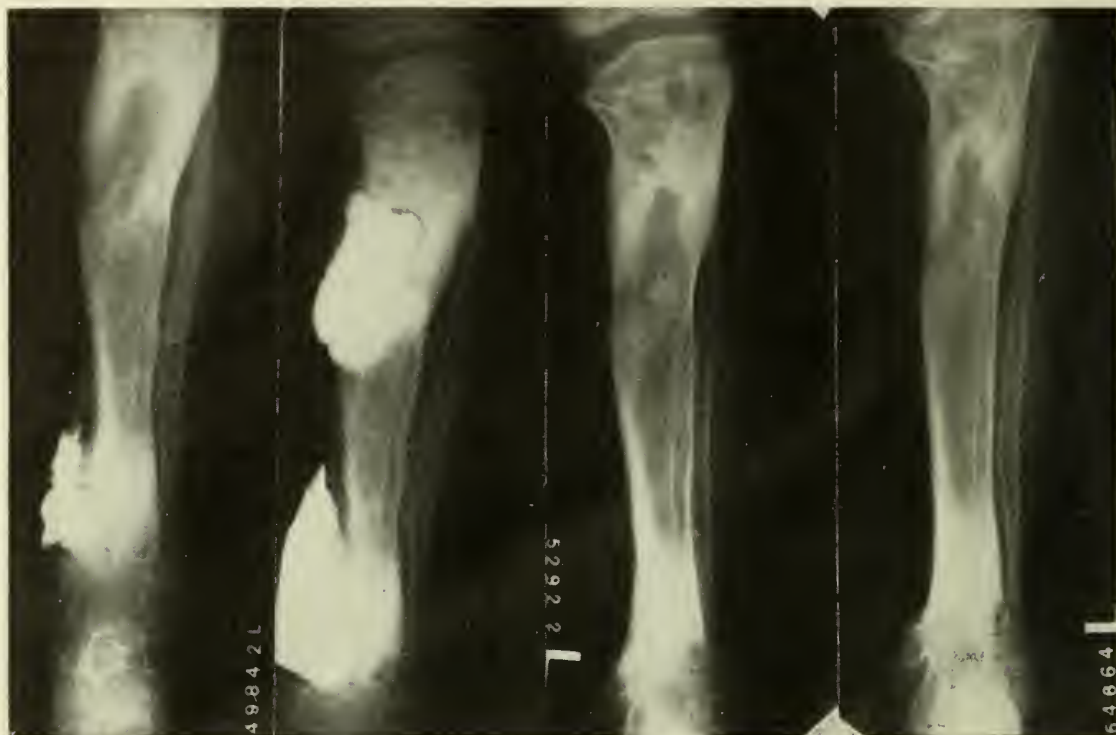
- (a) Early diagnosis of the infection and localization of the site of destruction.
- (b) Prevention of spread of infection by limiting motion through early hospitalization and rest.
- (c) Use of x-ray, which in early cases is of little value.

Operation

- (a) Preparation of skin with A.M.A., removed with tincture of iodine and alcohol; incision or opening that will completely expose the infected area.
- (b) Removal of as much necrotic or infected tissue as possible, by cauterizing the bone.
- (c) Curette deeply all diseased or infected tissue observed. Obtain cultures for laboratory examination.
- (d) Flush out the cavity with iodine.
- (e) Fill cavity with Bipp, packing gently and firmly into cavity. Do not use drainage tube.
- (f) Do not attempt to approximate the incised edges of the wound over the packing. Cover the entire area with a sterile pad and apply bandage.
- (g) Splint or cast to maintain length and position of the affected part to prevent muscle spasm or contraction in those patients in whom the amount of bone tissue removed is such that deformity may result.
- (h) Plaster of Paris cast well fitted and well padded is the most desirable for use.
- (i) Adhesive strapping or skeletal traction in those cases in which contracture has occurred and in which prevention of deformity is not possible by a simple cast.

Dressing

- (a) Inspection of bandage daily for the first week to prevent binding or any uncomfortable feeling.
- (b) Plaster cast is opened by windows



CASE 3a. Areas of infection showing Bipp packing on right. Photograph of left showing healing in upper infected area, packing removed.

CASE 3b. One year later shows healing tibial shaft, no drainage. Patient bearing weight on leg, slight limitation of motion in ankle joint.

over the operative site at the end of ten days and fresh dressings are applied.

(c) Those patients on whom no plaster is used are dressed at the same intervals.

Case Reports

Case 1—R. C., aged 16. Admitted to hospital August 13, 1932. Chief complaint: Pain and swelling of left femur, above the knee. X-ray: Negative. Operation revealed a large amount of pus with destruction of the periosteum and the presence of osteomyelitis of the left lower femur. Osteotomy, with Bipp pack. Culture was sent to laboratory. Culture showed staphylococci, from which a vaccine was prepared. Patient was given vaccine, with considerable reaction at first; later dosage was adjusted to patient's tolerance. Patient left hospital in an improved condition on Sept. 15. Patient returned to hospital Dec. 1, 1932, at which time he had a pathologic fracture through lower end of left femur. Posterior splint was applied. X-ray showed sequestrum free about the fracture line. Sequestrum was removed March 11, 1933. Cavity was packed with Bipp. Patient was discharged March 21 with pack remaining. Vaccine was given every third day. Nine months later pack was removed from a clean bony bed. Posterior splint was applied. Healing was uneventful with bone formation progressing. One year later the shaft of the diseased bone was completely formed; patient using knee and walking. Two years later x-ray shows no evidence of infection and patient has normal use of joint and leg. There was no recurrence of infection.

Case 2—K. C., aged 2. Chief complaint: Cellulitis

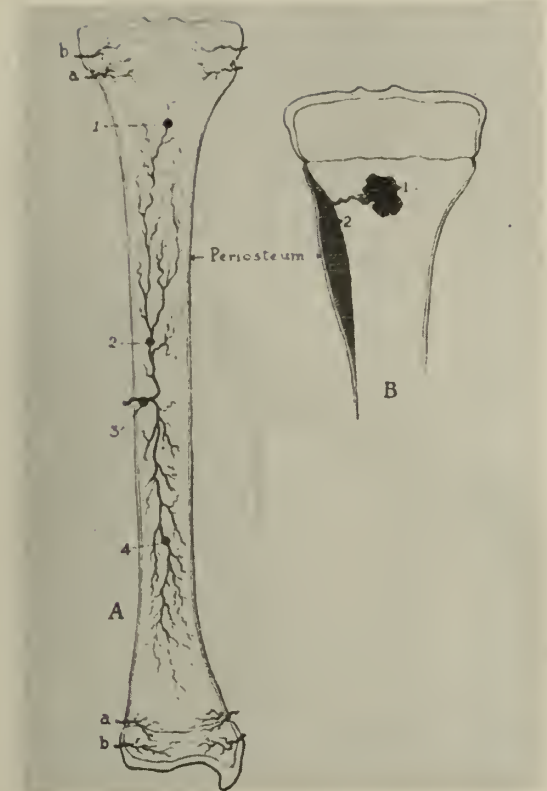
of face from furuncle on the bridge of nose. Patient developed a septicemia (staphylococci) with abscess of left lower leg. X-ray revealed osteomyelitis of left tibia. Operated upon Oct. 1, 1935, at which time the entire shaft of left tibia was removed and the periosteal bed was packed with Bipp. Cast was placed on left leg to prevent deformity due to loss of bone. Vaccine was made from cultures and the patient was tested intradermally. Vaccine was given every three days in increasing doses of one minim. Patient improved. Pack removed in March, 1936, with granulating areas clean. X-ray shows regeneration of shaft of tibia and no osteomyelitis present. New cast applied at this time and patient improved daily. Patient still under observation.

Case 3—L. M., aged 8. Patient injured left leg in July, 1933, at which time he sustained a simple fracture of left tibia. Abscess formations were formed along shaft of tibia following fracture, which were incised and drained on six different occasions. Hospitalized for one year. Patient was admitted to Grady Hospital in September, 1934, at which time there were draining sinuses along entire shaft of left tibia. X-ray showed destructive areas in the upper and lower shaft of tibia. Areas were curetted and hastily packed with Bipp as patient was in a serious condition. Cultures were sent to laboratory. Cast was applied and two blood transfusions were given following operation. Improvement was noted. Reoperated on in November, 1934, at which time sequestra were removed and a new pack placed and new cast applied. Readmitted again in July, 1935, at which time old pack was removed and area thoroughly curetted. Both areas flushed with iodine and dry dressing applied. Following the first

COMPLICATIONS FOLLOWING THE
USE OF SULFANILAMIDE

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Schematic presentation of the pathogenesis of acute osteomyelitis. A, nutrient vessels of the tibia—1, 2, 3 and 4, the area involved in hypothesized emboli: (1) Would involve only the metaphyseal area, the common occurrence; (2) Would involve the entire proximal portion; (3) Would involve the entire shaft, while (4) would involve the distal portion, and (1) and (4) would involve the two extremities but not the central portion of the shaft, a common occurrence. B represents the route which a central abscess takes to reach the subperiosteal region: (1) The abscess; (2) The extension beneath the periosteum. C, route of travel which a joint infection takes, either (1) following the epiphyseal line to reach the subcapular area, hence to the joint, the most common route, or (2), by direct extension through the epiphyseal cartilage to the joint.

operation. patient was given vaccine subcutaneously in increasing doses. Patient fell and sustained a compound fracture of both bones of the left forearm two weeks after dismissal from hospital; fractures were reduced but no evidence of osteomyelitis developed. Healing was uneventful. Patient has been able to walk without crutches for the past eight months. Leg has entirely healed. Slight limitation of motion of left ankle, but not enough to interfere with normal gait.

Conclusions

1. A treatment for osteomyelitis that has shown good results in the hands of numerous investigators for a period of five years is amplified.

2. I have treated acute and chronic cases with this method with no recurrences after two years' observation.

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During the past year over one hundred articles on sulfanilamide and its derivatives have been published in the English and American medical literature. The first articles set forth the efficacy of this drug in the treatment of puerperal sepsis. Its usefulness in combatting other infections due to the hemolytic streptococcus was soon recorded and experiments and clinical trials were extended to include the treatment of infections due to the meningococcus, gonococcus and pneumococcus; also infections of the urinary tract due to practically all the organisms encountered there except streptococcus faecalis, and group D beta hemolytic streptococcus. The drug has been used with success in undulant fever and malaria.

The optimum dosage of the drug has not been determined, but enough should be given to establish a level of 10 to 15 mg. of sulfanilamide per 100 cc. of blood. In urinary tract infections over 50 mg. per 100 cc. of urine should be present. Sulfanilamide when present in the blood permeates to all the tissue fluids of the body. The mechanism of its beneficial action is not definitely understood. There is still controversy as to whether the drug is bactericidal as well as bacteriostatic, and whether it stimulates increased phagocytosis.

All of the actions of sulfanilamide and its derivatives are not beneficial. Numerous unpleasant symptoms may follow the administration of this drug, such as general malaise, lassitude, weakness, fatigue, sleepiness, headache, tinnitus, dizziness, anorexia, nausea, vomiting, general intestinal disturbance, diarrhea, difficulty in micturition, and paresthesiae. These symptoms are much more likely to occur if the patient is ambulatory; they are frequent enough to prohibit the driving of any motor vehicle while the drug is in the body.

Cyanosis is the most conspicuous sign that follows the administration of sulfanilamide and it due to methemoglobin and sulfhemoglobin. These inert forms of hemoglobin may be detected in the blood of a majority of

patients taking the drug; their concentration usually is not great enough to indicate a discontinuance of the therapy. However, one fatal case of sulfhemoglobinemia following the use of sulfanilamide is on record.

A decrease in the carbon-dioxide-combining-power of the blood is also present in a majority of persons taking sulfanilamide. It may be related to the methemoglobinemia and sulfhemoglobinemia which reduce the amount of active hemoglobin capable of combining with carbon dioxide. This may be accompanied by hyperventilation and an alkaline urine without ketonuria. The usual decrease of the carbon-dioxide-combining-power is 10 to 15 volumes per cent; it is infrequent for it to be decreased below 30 volumes per cent and no fatalities have been attributable to such a decrease following the administration of sulfanilamide.

Fever and a maculopapular rash after the administration of sulfanilamide have been reported by several observers. Hageman and Blake² have grouped these two signs together in a specific syndrome which they have named "drug fever." The fever usually appeared seven to ten days after institution of therapy, and was accompanied by a morbilliform rash in about half of the patients. The fever apparently was not related to the concentration of the drug in the body, for the dosage had been reduced in a majority of the patients before the reaction appeared. The temperature elevation varied from normal to 106 degrees with an average duration of two to four days. The rash, when present, usually subsided along with the fever.

In some patients receiving sulfanilamide an alarming hemolytic anemia developed rapidly. Fortunately a majority of these patients have recovered following the discontinuance of the drug and the giving of multiple blood transfusions. Jaundice naturally accompanied the rapid hemolysis of the erythrocytes. In other cases of jaundice the drug has not been definitely incriminated. Liver dysfunction accompanying sulfanilamide therapy has been shown by as great a retention of bromsulfalein as 40 per cent at thirty minutes.

A decrease in the leukocyte count, especially the polymorphonuclear fraction, has been frequently observed. Because of past experience with amidopyrine and dintrophenol, it was early predicted that agranulocytosis

would probably follow the extensive use of sulfanilamide. Already there have been five fatal cases of agranulocytosis following the administration of sulfanilamide or its derivatives.

The 73 deaths following ingestion of Elixir of Sulfanilamide—Massengill reported to the American Medical Association, between Oct. 11 and Nov. 11, 1937, have shocked the entire nation. Intensive chemical, pharmacologic, and pathologic studies³ carried out since the first report, have exonerated sulfanilamide as the cause of these deaths. It has been shown that diethylene glycol, which was present in the Elixir of Sulfanilamide—Massengill in approximately 72 per cent by volume, is a very toxic substance and cumulative poison. The pathologic picture following anuria and death was the same in animals that received a 75 per cent solution of the diethylene glycol alone and the Elixir of Sulfanilamide—Massengill. There was a marked similarity in the pathologic picture in animals and in man following the ingestion of diethylene glycol in divided doses.

Since agranulocytosis, hemolytic anemia, "drug fever," decrease in carbon-dioxide-combining-power, sulfhemoglobinemia and methemoglobinemia may follow the administration of sulfanilamide it is obvious that this drug is not entirely non-toxic, therefore it should not be used indiscriminately. The type of infection should be determined by a smear or culture. In the presence of cyanosis, the blood should be examined spectroscopically for sulfhemoglobin and methemoglobin. The carbon-dioxide-combining-power of the blood should be determined if signs suggestive of acidosis appear. Every patient receiving sulfanilamide should have a complete blood count at least every other day to determine the first signs of a developing hemolytic anemia or agranulocytosis. Keeping in mind the late development of some of these complications, all patients should be kept under observation for several days after administration of the drug has been discontinued. Only Council accepted preparations of sulfanilamide should be used.

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PRESENTATION OF THE PRESIDENT'S KEY TO THE PRESIDENT,
BENJAMIN HARVEY MINCHEW*

C. W. ROBERTS, M.D.
Atlanta

If it is true that every great institution is but the lengthened shadow of some one man there must be a type of personality in whom some quality is found regularly to be playing a dominant role. Constancy of purpose is such a characteristic. Reliance upon hard work rather than upon inspiration or the fortunes of birth is another. But more fundamental than these and preceding them in orderly sequence is another quality which is found in man alone, the precious gift of freedom to choose a course of action. It is this liberty to choose which makes him a free moral agent. It is the wise exercise of this quality which distinguishes or discredits his work.

James Russell Lowell was about 40 years of age when the guns at Fort Sumter initiated the Civil War. He was one of a large group, both North and South, in whose soul burned an unquenchable desire to see human slavery abolished. His artistry as a great poet was devoted to a campaign of education through which it was hoped that America would banish without bloodshed, the unsavory institution of serfdom. He believed in the potency of choice over force of arms.

Once to every man and nation, comes the moment to decide,

In the strife of Truth with Falsehood for the good or evil side,

Some great cause, God's new Messiah, offering each the bloom or blight,

Parts the goats upon the left hand, and the sheep upon the right,

And the choice goes by forever, 'twixt that darkness and that light.

America chose to free her slaves and positive, although bloody action followed. Coolidge chose "not to run" and the importunities of politicians availed nothing. Beethoven chose to discount his deafness and the world thrills to the melody of his music. Helen Keller chose to ignore a misfortune of birth and thousands similarly benighted speak a language that was never heard. Franklin Delano Roosevelt chose to ignore the residue

of an attack of poliomyelitis and a great humanitarian graces the White House. Hippocrates chose to be ethical and his followers were left a code of fair dealing which is enshrined in the hearts of all true physicians.

Throughout history it is this rare quality which has characterized those whose contributions to the common weal have entitled them to wear the laurel wreath of service. They have not been immune to malevolent influences or to the obstacles and discouragements which harrow the path of all who dare to champion a laudable purpose. But they have been masters in the art of rising above such handicaps as thwart the ambitions of timorous man.

If one looks again at this quality which, when prudently exercised, makes the difference between saint and sinner, between the citizen and social parasite or the physician and his artefact, it will be found that its abode is in deep recesses of personality where it vitalizes by working from within. Such an artisan has coordination of head, heart and hand. He is famous because he is fragrant, kingly because he is inherently a king. Leadership issues as a natural fruition of good seed. Honors seek him out and are gracefully worn because they fit. They adorn but cannot embellish him. They are not wrapped about as a cloak of veneer. Pretense is to him anathema. Simplicity and genuineness are his hallmarks.

Further examining this quality it is found to be the slave of none, but the servant of all who elect to embrace it. Moreover this motivating force is no respecter of persons. Its votaries live in hut and palace, in hinterland or hard by the surging highways of affluence. It is nurtured by the common touch and refined in the crucible of human hardships, disappointments and bitter tears. In this atmosphere artistic talent seems best to flourish.

Medicine has a heritage of such pioneers who chose to be its servants. They believed that the profession as an institution devoted to the public welfare, was to be defined by them rather than that they would be defined merely through passive membership in its preferred circle. They asked nothing, took nothing from it but gave themselves to it.

*Presentation address before the Medical Association of Georgia, Macon, May 12, 1937.

Its privileges and prerogatives have been used as a sacred trust and transmitted to us unblemished. Today we carry on. Throughout the length and breadth of America there are legions who are faithful to its precepts, determined that its banner shall not be desecrated and ready to serve it as members in the ranks or in official capacities when our peers so decree.

Tonight we honor one who has been adjudged worthy of the highest gift which our Association can bestow. Born and reared upon a South Georgia farm, acquainted with field and stream and the great open spaces, fond of the simple folk that were his neighbors and partaking of their rugged honesty and innate goodness, Dr. Minchew has long devoted his energies to the securing for others, certain advantages which were denied him and his youthful contemporaries — one of whom now addresses you. By dint of ambitious courage, inspired by a will to serve, undaunted by handicaps which would have chilled the spirit of one of less fortitude, he has achieved wide recognition through the excellence of his labors in behalf of organized medicine and his contributions to the advancement of the educational, civic and political activities of his home city and native State. His life has been a busy one. At home in courts or in the company of great affairs, he is perhaps happiest in the menial tasks of life amongst the great army of the unobserved. By birth, training and inclination he is the ideal type of physician. With Ruskin he believes that "fine art is that in which the hand, the head and the heart go together." In the calm atmosphere of his farm home he heard a call. It came from a great cause to a great personality. It was one of God's new Messiahs offering him medicine's "bloom or blight." His moment of choice, as it comes to every man, was at hand. Endowed with constancy of purpose and the will to labor he chose to plant his feet on the high road made famous by the footprints of the Masters from Hippocrates down to our very day. Along this highway he sensed those enduring satisfactions which the venter of medicine can never bring. "Compassed about with so great a cloud of witnesses" he travels with the twin companions of courage and zeal.

Wherefore, Dr. Benjamin Harvey Minchew, President of the MEDICAL ASSOCIATION OF GEORGIA, in recognition of your devotion to all the tenets of medicine, to the cause of public health, to the problems social and economic which press for solution and applauding those qualities of mind and heart which have endeared you to a large circle of friends both in and out of the profession, I am commissioned to present to you the Association's Badge of Service. I do so in the full knowledge that the honor is abundantly deserved and that you will wear it with credit to yourself and to the Association to which you have rendered such distinguished service.

MEMORIAL ADDRESS*

A. J. MOONEY, M.D.†
Statesboro

Your Committee on Necrology submits the following names of our profession who since our last meeting have laid down their earthly labors and responsibilities and have joined the innumerable hosts on the other side. List of names follow:

- Almand, Charles Benjamin, Winder, April 16, 1937, aged 67.
- Baird, James Madison, Columbus, July 10, 1936, aged 67.
- Bridges, Benjamin Lynn, Ellaville, June 24, 1936, aged 63.
- Bridges, Robert L. Z., Brinson, February 14, 1937, aged 66.
- Bryant, Willis J., Summerville, April 5, 1937, aged 83.
- Cato, Frank Lee, Leslie, October 23, 1936, aged 73.
- Cheshire, James Leslie, Damascus, June 17, 1936, aged 53.
- Clower, Eugene, Cairo, August 19, 1936, aged 60.
- Craig, Alexander, Toccoa, August 12, 1936, aged 53.
- Davis, Jefferson, Toccoa, March 30, 1937, aged 71.
- DeLoach, Luther Asbury, Savannah, November 22, 1936, aged 53.
- Elrod, John Oscar, Forsyth, April 21, 1937, aged 59.
- Freeman, Ralph, Hoschton, April 13, 1937, aged 53.
- Freeman, James M., Lavonia, May 16, 1936, aged 67.
- Hack, George Byron, Hinesville, June 14, 1936, aged 49.
- Hailey, William Isham, Hartwell, October 15, 1936, aged 66.
- Hall, James Madison, Hazlehurst, July 25, 1936, aged 60.
- Hardman, Lemartine Griffin, Commerce, February 18, 1937, aged 80.
- Harper, John W., Hampton, March 22, 1937, aged 62.

*Memorial address before the Medical Association of Georgia, Macon, May 13, 1937.

Hodges, Lonie W., Gainesville, September 29, 1936, aged 60.
 Liles, William Washington, Gainesville, November 6, 1936, aged 61.
 Lozier, Nathaniel Hooks, Sandersville, October 2, 1936, aged 46.
 Lynch, Chandler Spinx, Lumpkin, February 20, 1937, aged 48.
 McArthur, Thomas J., Cordele, February 15, 1937, aged 68.
 McKinney, William T., Cave Springs, June 2, 1936, aged 71.
 Moore, Daniel L., Nahunta, June 24, 1936, aged 62.
 Moore, William Richard, Cairo, January 8, 1937, aged 70.
 Nunnally, Harry Bell, Monroe, May 13, 1936, aged 53.
 Odum, Walter M., Brunswick, August 23, 1936, aged 49.
 Powell, John Franklin, Eastman, November 28, 1936, aged 77.
 Rountree, Manning Alonzo, Reidsville, July 21, 1936, aged 70.
 Ward, Leon Colquitt, Damascus, January 31, 1937, aged 61.
 Weeks, Daniel H., Nicholls, January 5, 1937, aged 62.
 Williams, William P., Blackshear, September 24, 1936, aged 69.

Contemplating the physiologic mystery of life in the beginning, when "man cometh forth as a flower," until the end, when he "fleeth as a shadow and continueth not," the biblical poet and a philosopher were discussing "if a man die shall he live again." They were measuring life by the standard of the years man lived. With the coming of the Great Redeemer, with His teaching of love and service, humility and charity, another standard by which man's life was measured was given to the world. With these great humanitarian principles inculcated in the physician from the very beginning of "arte medendi," his life may be measured by both standards, the years he has lived and the service he has rendered, and it is with this thought that today we pay tribute to our professional brethren who were with us a year ago. Measured by the standard of years, some served comparatively short, while others were blessed with many years. Measured by the standard of service and charity, all were worthy of the benediction. "Well done, good and faithful servant."

As stars differ in magnitude, so it was with them in different fields of activity. Some served where distances were to be traveled; others in villages and towns, while others labored in cities with every scientific aid at

their bidding. Wherever their field of activity, if an epidemic threatened they were the guardian of the public health. If commerce was to advance they were the ones to precede it. Enjoying the confidence of their clientele, they brought relief to many a pain-racked body. How many a woman will recall with gratitude their kindly ministrations and aid in her hour of travail! If a mind was racked with cares and worries, he was the confessor and adviser. If the will was weak, he gave them strength. As healers, advisers, philosophers and friends, they occupied the dearest spot in the lives of those among whom they lived. But among them there is one whose qualifications and attainments impel attention, Dr. Lemartine Griffin Hardman, physician, business man, banker, statesman, former Governor of Georgia, and philanthropist. Living to the ripe age of eighty, he was known, loved and respected by three generations of doctors. His influence has been felt over the entire State; his religious denominational activities and philanthropy to educational institutions will stand as an everlasting monument to this man who used so beneficently the talents and wealth that were bestowed on him by a great Providence.

With tender memories of deeds of service and charity among whom they lived and with their names spread on our records and stored in the archives of the Association, we leave them. They sleep beneath the soil of the State they served so well. There, free of fret and pain and in the perfect rest that followed their labors while among us, they await the coming of the morn of the resurrection. Peace to their ashes.

Summer winds so gently blow,
 Winter snows so softly lie,
 Over their graves so free of woe,
 Brothers by ties, goodbye! goodbye!

COMMITTEE ON NECROLOGY

†A. J. MOONEY, STATESBORO, CHAIRMAN
 J. W. PALMER, AILEY
 C. K. SHARP, ARLINGTON

The Eighty-ninth Annual Session of the MEDICAL ASSOCIATION OF GEORGIA will be held at the Forest Hills Hotel, Augusta, April 26, 27, 28, 29, 1938. Titles for papers should be submitted to Dr. Edgar D. Shanks, Secretary-Treasurer, 478 Peachtree Street, N. E., Atlanta, or to Dr. H. Cliff Sauls, Chairman of the Committee on Scientific Work, Medical Arts Building, Atlanta. If interested in reading a paper at the Augusta session, title for paper should be sent in immediately.

TRANSPARENT SPECIMENS

*Spalteholz's Method of Preparation**

JOHN VENABLE, M.D.

Emory University

As the x-ray aids the medical clinician in the visualization of internal structure, so transparent biologic specimens offer assistance in the demonstration of structure within the depths of a plant or animal. But there is this difference — the visualization of structure within a transparent specimen, by virtue of binocular vision, is stereoscopic and may be viewed equally well from any angle. These specimens, then, may make valuable contributions to the museum, in teaching, and in the investigation of many problems where the structures are too small for accurate dissection or where it is desirable to preserve the overlying parts in their normal relationships.

Of the methods developed for the production of transparent tissues, that of O. Schultz is probably most widely known. After fixation the specimen is placed in a solution of potassium hydroxide until corrosion has occurred to such a degree that the specimen becomes translucent. This occurs when the soft tissues have been reduced to a jelly-like mass. This destruction of tissue structure allows light to pass through with less distortion. When placed in pure glycerin, which has a refractive index equal to that of the jelly-like mass of tissue, the specimen becomes infiltrated by a material of equal refractive index making it a homogeneous mass, all parts of which have the same refractive index. If kept immersed in glycerin to prevent diffusion of light at the surface, light may pass through in a straight line without diffusion and the object will then be transparent. Selective staining, a lesser degree of corrosion, or the injection of opaque masses will cause various structures to stand out in relief within the transparent body.

In addition to the above there are several methods following the same plan but differing in the materials used. Javelle has used potassium hydroxide and chromic acid solution. Neither of these has been used by the

author, but they are mentioned as examples of the corrosion method.

Analysis will show that these methods may be termed physiochemical; that is, there is produced in the tissues a chemical change which destroys the refracting surfaces between the cells and between the tissues, followed by infiltration into the mass of a substance having the same refractive index. In this way a homogeneous specimen is obtained through which light may pass without diffusion, and, therefore, with little or no distortion. In the hands of the author there has been a wide variation of results obtained by the same technic, that of Schultz. The results have varied tremendously with the small animal preparations, and with older animals the deeper structures have become almost liquid while the skin has become only translucent, a condition not at all satisfactory.

An investigation was made concerning the method of Dr. Karl Werner Spalteholz. A description of this method was published in book form, "Über das Durchsichtigmachen von menschlichen und tierischen präparaten; nebst Anhang: Über Knochenfärbung." S. Hirzel, Leipzig, 1911.

In casting about for a method of studying the coronary circulation of man, Spalteholz was not satisfied with the x-ray after injection with radio-opaque masses. Neither of the physiochemical methods was permanent nor sufficient for his purpose. After months of meticulous research he perfected this method which consists of the infiltration of fixed tissues by a fluid having the same refractive index as the tissues. Without destruction of the tissue, the mass is formed into a homogeneous refractive body, all planes of diffusion being obliterated if the object is kept within the fluid so as to prevent diffusion at the outer surfaces.

Refractive indices had prior to that time been worked out for inorganic materials but not for organic. It was known that benzene caused tissue to become somewhat translucent, while materials with refractive indices lower than that of benzene did not. The suspicion arose, then, that the refractive indices of tissues were somewhat higher than that of benzene (1.501). Rather than find one fluid with the correct index, it was decided to use two fluids, one with an index somewhat high-

*From the Department of Gross Anatomy of Emory University School of Medicine, Emory University.

er and the other with an index somewhat lower than that of the tissue to be cleared. The results from benzene (1.501) and carbon bisulfide (1.628) were good, but these were discarded because they were unpleasant, dangerous, and inflammable.

Eventually a combination of synthetic oil of wintergreen (1.538) with either benzylbenzoate (1.570) or Isosafrol (1.577) was chosen. This produced excellent results in the absence of objectionable factors and was also chemically stable and colorless.

There is slight variation of the refractive indices of various animal tissues. The simplest means for determining the refractive index of a tissue is to clear it completely in the combination fluid and then compute the index from the proportions of each fluid used. This was done for a number of tissues, but the work was long and tedious, inasmuch as a fluid of too low an index produces results identical to those produced by a fluid of too high an index.

By varying the refractive index of the combination fluid until an index is obtained which is the same as the tissue animal tissues may be made almost completely transparent. In the preparation of bone decalcified specimens must be used, as the salt content of the bone gives it a very high index. The injection of colored masses into any space may be used to outline the extent, as the tissues are not damaged and the fluid will not react on the proper mass. Cleared by this method, the tissues have their normal color—a light yellow or brown, but they are nevertheless perfectly transparent. Tissues having a slightly different refractive index from that of the fluid may be faintly outlined by shadows of relatively less transparency. These preparations are permanent, lasting indefinitely without lessening of transparency or change of color. By proper control of the mixture, a specimen containing two tissues of slightly differing refractive indices may be shown with one tissue perfectly transparent and the other slightly less so, the reverse being possible by the addition of whichever fluid is needed to give the refractive index of the less transparent tissue. The fluids are relatively inexpensive and easily procured from the perfume supply houses.

Cleared specimens should be mounted in square or rectangular jars with or without

ground sides. A good museum jar has a flat enough side for general purposes. The specimens should at all times be immersed in the fluid and the jars should be sealed in the usual manner.

The following is an outline of the steps necessary for the clearing of animal tissues:

1. Fixation in formalin or alcohol.
2. Decalcification, if necessary. In whole specimens the bones may be stained as in technic given below.
3. Bleaching in hydrogen peroxide, either acid or strongly alkaline.
4. Wash well.
5. Through increasing alcohols, including absolute.
6. Through two changes of benzene (inflammable).
7. Place in the end fluid. Approximate ratios are (by weight):

	<i>Methyl Salicylate</i>	<i>Benzyl- benzoate</i>
Brain and spinal cord	1	1
Decalcified human bone	5	3
Large human embryo	2	1
Whole frogs and fish	3	1
Young human embryos	3	1
Nephrops Norwegicus	4	1
Youngest human embryos	5	1

8. Evacuation of benzene and air.

The following is the method for coloring bones.

- a. A saturated solution of alizarin crystals in 95% alcohol; add acetic acid until the odor of the acid is detected.

The coloring solution is composed of 10 parts *a*, and 190 parts of 70% alcohol.

Technic:

1. Fix in formalin.
2. Bleach in a neutral or strong alkaline hydrogen peroxide.
3. Wash well.
4. Carry through ascending alcohols to 70%.
5. Keep in coloring solution for days or weeks.
6. 70% alcohol.
7. 90% alcohol.
8. Glycerine pure or diluted.
9. 95% alcohol.
10. Absolute alcohol.
11. Through two changes of benzene.
12. Into end fluid followed by the evacuation of benzene and air.

In May, 1933 GEORGE R. LIVERMORE, Memphis, Tenn. (*Journal A. M. A.*, Nov. 6, 1937), stressed the value of nephrostomy in anuria and reported four cases in which he was successful both in establishing diuresis and in saving life. He also reported a case of anuria due to poisoning with mercury bichloride in which the treatment had the same happy result. He presents another successful result, in a case of anuria due to poisoning with saponated solution of cresol. The patient had a creatinine content of 7 mg. and practically complete anuria, and nephrostomy and decapsulation were not done till the eighth day following poisoning. He made a complete recovery.

THE JOURNAL

OF THE

MEDICAL ASSOCIATION OF GEORGIA

Devoted to the Welfare of the Medical Association of Georgia

478 Peachtree Street, N. E., Atlanta, Ga.

DECEMBER, 1937

PROPOSALS FROM THE MEDICAL PROFESSION

It has been stated that few suggestions for social reforms have originated in the Southern States. This is probably due to the fact that the majority of the inhabitants of this section of our country are descendants of the original stocks who immigrated here, coming largely from England and France. There has not been as yet any great admixture with other nationalities, who came later; neither do the latter comprise a large part of our citizenry. However, we are an important part of the Union and it is to our interest to be mindful of the opinions and suggestions of all those who make the great mass of the body politic. We of the South can no longer live to ourselves, and it is doubted if such is desired.

The plans now being made for social reforms are numerous and the one that is of especial concern to our profession deals with the present individualistic method of distributing medical care. It is to the interest of every physician to study carefully such proposals as are being put forward so that he can give expression to his opinion in an enlightened manner. Merely to denounce a plan is not sufficient, and will not satisfy the practical statesman. A counter proposal is in order, one that will solve the problem in hand in a more efficient manner. The time has arrived for our members to devote part of their time to thinking and suggesting positive means of dealing with the problem of the medically indigent; that is, unless we wish others to do both planning and execution. Simply to sit back and negative the suggestions of others is not the order of the day; and if we wish to continue to enjoy the esteem which is now ours the medical profession must assert leadership.

Any plan to care for the indigent sick will necessarily vary with each section of the country. The method applicable to Georgia

will very likely be unsuitable for Utah. And so it is incumbent upon all state medical associations to study and recommend the best solution for their respective states. In our own State it seems, to the writer, that the people most in need of aid are the small town and rural dwellers. Sometimes physicians cannot be had but the chief difficulty is hospitalization for those unable to afford this service. The taxpayers in large municipalities erect hospitals for the care of the medically indigent within their corporate limits, but very little is done for that important class of our citizens, the agriculturist. It is this group that digs sustenance from the earth for all of us. Surely they deserve consideration and any plan that is devised should have hospital and medical care of these people as its chief objective.

Any centralized scheme for medical care, whether State or national, will be most expensive to the already overburdened taxpayer, will result in the establishment of another bureau of which we already have far too many, and will be to the lasting detriment of the medical profession.

The County Plan for Medical Care, whereby each county (in sparsely settled regions two or more counties combining) be allowed to levy a tax for the care of its medically indigent will preserve local control through the county commissioners, will be less expensive, and arrangements for the medical and hospital care should be made with local physicians through the county medical society. Such would include contracts with existing hospitals, if deemed wise, or the erection of hospitals in areas of the State now lacking this facility. Furthermore, it would aid in solving the problem of the present unequal distribution of physicians, for those seeking locations would prefer those sections in which laboratory and hospital facilities are to be had.

Giving adequate medical care is expensive and the cost is just as great for the one who cannot pay as the one who can. In long, drawn-out illnesses in which hospitalization is essential the physician's fee is usually the smallest item, but the hospital charges may prove a lasting burden, or wreck the financial stability of an honest, hard-working man, who is just as desirous of giving a member of

his family the best to be had as is the well-to-do person.

At this season it would be well for us to meditate upon a situation of such momentous importance to the less favored of our citizens, and of equal consequence to our future welfare. In such matters the teachings of the Humble Man of Nazareth are to lay aside all questions of self, and altruism is particularly applicable to this question.

This officer of your Association will be most grateful for suggestions, and extends to each physician and family best wishes for a Happy Christmas and a New Year of prosperity, conjoined with useful service to our fellow man.

GEO. A. TRAYLOR, M.D., *President.*

LOW BACKBONE AND SCIATIC PAIN

One of the most frequent types of pain for which relief is sought is that in the lower part of the back, which often radiates down the leg to the knee or ankle. Such pain may be due to many causes. One of these consists of a herniation or protrusion of the nucleus pulposus of an intervertebral disc into the spinal canal, so as to cause direct pressure on one or more spinal nerve roots. The frequency and importance of this lesion has recently been emphasized by a number of neurologists and neurosurgeons. Judging from the increasing frequency with which this lesion is being revealed in cases of persistent backache and "sciatica" it must be a common condition. The usual cause of such herniation is an injury, most frequently a strain in lifting heavy objects, a blow on the spine, or a fall on the feet or buttocks. Undoubtedly, many cases have been overlooked in the past and have been labeled as cases of "rail-road spine," compensation or traumatic neurosis. This is unfortunate as the lesion is one which can be surgically removed with relief from the pain.

In most of the reported cases, the pain has been persistent for several months or years, located in the lumbosacral region and radiating down one or both legs to the ankle. It is resistant to the usual conservative methods of treatment for sciatic pain. Roentgen-ray examinations of the spine are usually negative and there is no pathognomonic finding, although a wedge-shaped or narrowed disc may

be suggestive. The neurologic examination commonly shows a loss of the Achilles reflex on the involved side, with pain on extension of the leg. Occasionally more severe neurologic changes will be present, as sensory changes or impairment of the sphincters. Local tenderness and rigidity of the spine may be present. However, the neurologic examination may be entirely normal.

An important abnormality is usually present in the spinal fluid, and this is another reason why a spinal fluid study should be made in all cases of chronic "sciatica." This abnormality consists of a markedly increased protein content (above 45 milligrams per hundred cubic centimeters) as in any case of spinal cord compression. There may be no evidence of spinal block, as the lesion is often below the usual site of puncture.

Final proof of the lesion is obtained by the intraspinal injection of 2-5 cc. lipiodol, followed by careful fluoroscopic observations while the patient is slowly tilted upward and downward on a tilt-table. In this way the ascent and descent of the oil can be watched and a defect in the shadow of the oil can be seen as it passes the herniation. Such observations should be made while the patient lies prone, and also in lateral and oblique positions. We know today that the intraspinal injection of lipiodol may be done safely and without harm to the patient if proper precautions are taken.

In order to select cases of "sciatica" for lipiodol study, Love suggested that a spinal fluid study should first be made. If there is doubt concerning the diagnosis, an epidural injection of saline may later be done. The epidural injection frequently relieves the pain in benign types of sciatic neuritis, but usually increases the pain in cases of herniation so that the injection may have to be stopped. He also suggests a "reversed Queckenstedt" test, which reveals a block low in the spinal canal.

The possibility of herniation of an intervertebral disc should be considered in all cases of chronic backache and sciatic pain, especially when there is a history of injury. It is evidently a common cause of such pain and one that can be permanently removed by proper surgery.

WM. A. SMITH, M.D.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

T. F. ABERCROMBIE, M.D., *Director*

BRANCH LABORATORY SERVICE

One of the products of increased appropriation to the State Department of Health by the Legislature has been the establishment of two branch laboratories in South Georgia—one at Waycross to serve the Southeast, and the other at Albany to serve the Southwest quadrant of the State. The need for branch laboratories has long been felt, but has recently become more acute because of the rapidly increasing demands for public health laboratory service. Not only will the branches render laboratory service more readily available to South Georgia, but they will help to relieve the overload on the central laboratories. During the past five years, the specimen load per month has increased from 10,210, in 1932, to 20,138, in 1937.

Every effort has been made to qualify the branch laboratories on a basis equivalent to the central laboratory.

Equipment of the highest quality has been installed, especially such items as microscopes, autoclaves, sterilizers, water baths, refrigerators, centrifuges, etc.

Personnel—Great care has been employed in selecting well-trained workers. In both laboratories, the directors are men who, while not physicians, are graduates of Johns Hopkins School of Hygiene. Both received additional training at the central laboratory in Atlanta before being assigned.

Southwestern Branch—This is located at 401 Eighth Avenue, Albany, in a six-room brick building which has been extensively remodeled for the purpose. Mr. Frank H. Stubbs, M.Sc., is the director. He is assisted by two technicians, Miss Elizabeth Butt and Miss Allene Jackson. Miss Butt graduated from Wesleyan in 1935 and came to the State Department of Health shortly thereafter, first as a student and later as a staff technician. In 1937, she was granted a fellowship at Johns Hopkins School of Hygiene. Miss Jackson graduated from Shorter College in 1935 and spent one year as a graduate student at Johns Hopkins School of Hygiene. Miss Betty Murray, of Albany, a graduate of Georgia State College of Women, is the office secretary. Additional personnel will be added as occasion demands.

Southeastern Branch—This is located at 222 State Street, Waycross, in a six-room dwelling which has been specially remodeled for laboratory use. Marvin M. Harris, Ph.D., is the director. Dr. Harris has, in addition to his doctorate, five years' experience as a teacher of public health bacteriology at Johns Hop-

kins. He is assisted by Mr. Carl S. Adams and Mrs. Mildred M. Galton. Mr. Adams is a graduate of the University of North Carolina and has had several months experience as serologist in the U. S. Marine Hospital at Norfolk, Virginia. Mrs. Galton is a graduate of Shorter College and has had one year's postgraduate training at Johns Hopkins. Miss Mary Sanders, of Waycross, is office Secretary. It is planned to add more workers at the Waycross branch as occasion demands.

Service—The branches are equipped and manned to render the same service as that heretofore available at the central laboratory. Examinations will be made for tuberculosis, diphtheria, typhoid and other enteric fevers, typhus fever, undulant fever, tularemia, malaria, intestinal parasites, venereal diseases, rabies and any communicable disease for which reliable laboratory tests have been devised.

Specimen outfits will be supplied to the physicians and health officers, each bearing printed return labels to the branches.

Biological products including diphtheria antitoxin, toxoid, Schick test material, typhoid vaccine, smallpox vaccine, antirabic treatment, tetanus anti-toxin, silver nitrate ampoules, et al., will be available at the branches.

No attempt is being made at this time to define district lines. Such lines would depend largely upon conveniences, such as railroad, express, mail service and highways. Therefore, distance alone cannot be the determining factor. We, therefore, request that the physicians try both laboratories and determine by experience which is most convenient. Later, every physician will be requested to indicate what laboratory is most satisfactory. By this means it may be possible to establish definite districts more accurately.

T. F. SELLERS, M.D.,
Chief of Laboratories,
Georgia Dept. of Public Health.

The Atlanta Graduate Medical Assembly will be held at the Biltmore Hotel, Atlanta, January 25, 26, 27, 28, 1938. Speakers on the program are: Dr. Ralph Major, Kansas City; Dr. Marion A. Blankenhorn, Cincinnati; Dr. Hugo Roesler, Philadelphia; Dr. Allen O. Whipple, New York; Dr. Jno. J. Morton, Rochester; Dr. Sherwood Moore, St. Louis; Dr. A. Graeme Mitchell, Cincinnati; Dr. Arthur J. Bedell, Albany, N. Y.; Dr. Harry R. Slack, Baltimore; Dr. Wm. C. Sandy, Harrisburg, Pa.; also others who will speak on different subjects.

COMMUNICATION TREATMENT OF OSTEOMYELITIS

To the Editor:

Quite a number of times since Dr. W. S. Baer reported his success in treating osteomyelitis and other deep suppurations with the live maggot, the writer has had in mind giving credit for this same observation of the cleansing effect of live maggots' activity in pus cases to a dear, departed Brunswick physician, who gave a talk at our local medical society meeting nearly thirty years ago on "Civil War Surgery."

Dear old Doctor Judson A. Butts, past seventy years of age when the writer came to Brunswick, was still in active practice, and served a term in the Georgia Legislature from Glynn County. He reared a large family of distinguished sons and daughters. One of his sons, Judge Eustace C. Butts, also served in the Legislature.

As I recall his talk of nearly thirty years ago, when relating the stories of the surgery of amputated limbs and deep wounds in the poorly equipped and overcrowded field hospitals of the Confederacy, he called attention to hasty, infrequent and many times inadequate dressings of stumps and wounds. He spoke often of the "laudable pus," confidently expected and almost always found; of "second intention" healing; of the gratification experienced when at last "proud flesh" had begun to fill in the wounds; of the hot iron cauterizations, etc. "But," he remarked, "you doctors will be surprised to know that in many of the cases in which the dressings became loosened and unchanged for some time, we found that blow flies had crept in and the sloughing wound was found filled with maggots; and when these maggots were washed out, we generally found the wounds clean, pink or reddish, and practically free of pus. Of course, this deplorable state of affairs could not often be helped, because of our limited numbers of surgeons and the large numbers of wounded, but the fact remains that the patients the blow flies got to did better than most of the others."

The dear old doctor did not advocate the treatment as a therapeutic measure at that time, but his observations are certainly worth recording as worthy of the scientific mind that characterized the resourcefulness of the South's older surgeons and physicians. Quotations of his discourse are from memory, but Dr. H. M. Branham and I, the only Brunswick physicians who were present at the meeting, still living, can vouch for the substance of Dr. Butts' remarks.

J. W. SIMMONS, M.D.

NEWS ITEMS

THE COFFEE COUNTY MEDICAL SOCIETY met at Douglas on October 27th. Dr. T. H. Clark, Douglas, read a paper on *The Treatment of Varicose Veins*; Dr. Ross Brown, State Department of Public Health, Atlanta, spoke on *The Diagnosis and Treatment of Syphilis*. The Society met again at Douglas on November 24th. Speakers on the program were: Dr. Sage Harper, Ambrose, and Dr. J. G. Crovatt, Douglas.

THE WARE COUNTY MEDICAL SOCIETY met at the Phoenix Hotel, Waycross, on November 3rd. Dr.

B. R. Bussell and Dr. W. C. Hafford, both of Waycross, were hosts at dinner. Dr. Lewis H. Oden, Jr., Blackshear, read a paper entitled, *The Raw Apple Diet in the Treatment of the Diarrheas of Children*.

THE SPALDING COUNTY MEDICAL SOCIETY met at the Strickland and Son Memorial Hospital, Griffin, on October 19th. Dr. Lon Grove, Atlanta, spoke on the *Surgical Management of Gallbladder Diseases*; Dr. Guy G. Lunsford, director of county health work with the State Department of Public Health, talked on the Ellis Health Law and different phases of health activities.

IF INTERESTED in a new opening and excellent location to practice medicine, write the Secretary-Treasurer of the Association.

THE RANDOLPH COUNTY MEDICAL SOCIETY met at the Patterson Hospital, Cuthbert, on November 4th. Dr. Lewis Beason, Fort Gaines, read a paper entitled, *Puerperal Infection*; Dr. Clarence Sharp spoke on *Tuberculosis*.

DR. EARL FLOYD, Atlanta, was elected president-elect of the Southeastern Branch Society of the American Urological Association at the close of its annual meeting in Birmingham on November 5th. The next meeting will be held at Louisville, Ky.

THE PHYSICIANS OF WAYCROSS entertained the nurses of Waycross at a Halloween party at the Okefenokee Golf Club on October 31st. Dr. W. F. Reavis was chairman of the entertainment committee and Dr. Kenneth McCullough was toastmaster.

DR. PAUL P. MCCAIN, Sanatorium, N. C., superintendent and medical director of the North Carolina Tuberculosis Sanatorium, spoke at a public meeting of the Richmond County Medical Society on November 18th. Dr. Eugene E. Murphey, Augusta, president of the Augusta-Richmond County Tuberculosis Association, was in charge of arrangements.

THE JACKSON-BARROW COUNTIES MEDICAL SOCIETY met at Jefferson on November 1st. Dr. J. H. Campbell, Commerce, spoke on *Headache*.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on November 9th. Dr. Shelton P. Sanford read a paper on *Jaundice*; Dr. J. T. Eberhart, *Conservative Surgery in Large Bilateral Renal Calculae*; Dr. J. W. Young, *Fracture of the Jaw*.

DR. SAMUEL Y. BROWN announces the removal of his offices to Suite 501 Doctors' Building, 478 Peachtree Street, N. E., Atlanta.

THE THIRD DISTRICT MEDICAL SOCIETY met at the Ralston Hotel, Columbus, on November 10th. Titles of papers on the scientific program were: *The Tuberculosis Problem in Georgia*, Dr. H. C. Schenck, Atlanta; discussed by Dr. J. Fred Adams, Montezuma, and Dr. Guy J. Dillard, Columbus. *Proctology of the Ambulant Patient*, Dr. J. H. McDuffie, Columbus; discussed by Dr. A. R. Sims, Richland, and Dr. L. S. Boyette, Ellaville. *Headaches from Eye, Ear, Nose and Throat Standpoint*, Dr. Geo. A. Andrews. East-

man; discussed by Dr. S. A. Scruggs, Americus, and Dr. J. B. Thompson, Columbus. *Syphilis*, Dr. S. Ross Brown, Atlanta; discussed by Dr. W. G. Elliott, Cuthbert, and Dr. F. H. Sams, Reynolds. Dr. J. C. Patterson, Cuthbert, councilor, made a report for the district. Arrangement Committee were: Dr. Wm. L. Cooke, Dr. Willis P. Jordan and Dr. John E. Walker. Officers are: Dr. Martin L. Malloy, Vienna, president; Dr. W. P. Coffee, Fitzgerald, vice-president; Dr. Chas. A. Greer, Oglethorpe, secretary-treasurer.

DR. ROGER C. SWINT, Atlanta, formerly of Milledgeville and for many years superintendent of the Milledgeville State Hospital, was named superintendent emeritus by the State Board of Public Welfare. The title was awarded to Dr. Swint for his 32 years of service to the mentally sick of Georgia.

THE STAFF MEETING of the Crawford W. Long Memorial Hospital, Atlanta, was held on November 11th. The program consisted of reports of committees and a discussion of mortalities. Case report by Dr. C. M. Warnock, *Aplastic Anemia*.

DR. HOWARD HAILEY and DR. HUGH HAILEY announce their association in the practice of dermatology and syphilology with offices in Suite 915 Candler Building, Atlanta.

THE GLYNN COUNTY MEDICAL SOCIETY met at the Oglethorpe Hotel, Brunswick, on November 4th. Dr. Thomas Parran, surgeon general for the United States Public Health Service, spoke on the control of syphilis. He told about the initiative and work being done by Dr. J. R. McCord, Atlanta, for the prevention of congenital syphilis.

DR. J. G. STANDIFER, Blakely, attended the Assembly of the Interstate Postgraduate Medical Association of North America, held at St. Louis, Mo., October 16th to 23rd; also the annual Clinical Congress of the American College of Surgeons at Chicago.

DR. AND MRS. R. C. MONTGOMERY, Butler, entertained members of the Taylor County Medical Society and physicians of adjoining counties at dinner in their home on November 2nd.

DR. C. F. HOLTON, Savannah, discussed the Georgia Workmen's Compensation Act at a meeting of the Glynn County Medical Society held at the Brunswick City Hospital on November 9th.

THE SOUTHERN MEDICAL ASSOCIATION held its thirty-first annual meeting at New Orleans, La., November 30-December 3. Members of the Medical Association of Georgia who had displays in the scientific exhibit were: Dr. William Willis Anderson and Dr. Don F. Cathcart, Atlanta; Dr. Roy S. Leadingham, Atlanta; Dr. Wm. F. Lake and Dr. A. J. Ayers, Atlanta; Dr. Edgar R. Pund and Dr. Richard Torpin, Augusta; Dr. Robert B. Greenblatt and Dr. Everett S. Sanderson, Augusta; Dr. Murdock Euen and Dr. Stacy C. Howell, Atlanta. Dr. D. Henry Poer, Atlanta, showed a moving picture of (1) Subtotal Thyroidectomy for Exophthalmic Goiter, and (2) Total Thyroidectomy. The following read scientific papers: Dr. Stewart R. Roberts, Atlanta; Dr. G. B. Denit,

Atlanta; Dr. James E. Paullin, Atlanta; Dr. Joseph Yampolsky, Atlanta; Dr. Francis B. Blackmar, Columbus; Dr. Wm. Willis Anderson, Atlanta; Dr. Robert B. Greenblatt and Dr. Edgar R. Pund, Augusta; Dr. Wm. F. Lake and Dr. A. J. Ayers, Atlanta; Dr. H. D. Allen, Jr., Milledgeville; Dr. James J. Clark, Atlanta; Dr. Howard Hailey and Dr. Hugh Hailey, Atlanta; Dr. B. T. Beasley, Atlanta; Dr. Richard Torpin, Augusta; Dr. Marion C. Pruitt, Atlanta; Dr. J. W. Palmer, Ailey; Dr. C. F. Holton, Savannah; Dr. Grady E. Clay, Atlanta; Dr. Alton V. Hallum, Atlanta; Dr. Calhoun McDougall, Atlanta; Dr. Thos. L. Tidmore, Atlanta; Dr. T. H. D. Griffiths, Savannah; Dr. Victor H. Bassett, Savannah. Other members who were on the program to lead the discussion on papers were: Dr. William Carter Smith, Atlanta; Dr. D. Henry Poer, Atlanta; Dr. F. Lee Bivings, Atlanta; Dr. Roy R. Kracke, Emory University; Dr. Edgar D. Shanks, Atlanta; Dr. Virgil P. Sydenstricker, Augusta; Dr. Everett L. Bishop, Atlanta; Dr. Francis P. Parker, Emory University; Dr. Russell H. Oppenheimer, Atlanta; Dr. Edgar F. Fincher, Atlanta; Dr. Edgar G. Ballenger, Atlanta; Dr. Geo. F. Eubanks, Atlanta; Dr. Hulett H. Askew, Atlanta; Dr. Francis B. Blackmar, Columbus. Dr. Frank K. Boland, Atlanta, president of the Association, presided at the general meetings.

THE STAFF MEETING of the Georgia Baptist Hospital, Atlanta, was held on November 16th. Dr. J. T. Floyd and Dr. J. C. Massee presented a case study of *Septicemia and Sulfanilamide*; Dr. E. S. Byrd presented a case of *Metastatic Melanoma*.

DR. ALVIN E. SIEGEL announces the removal of his offices to the Medical Arts Building, 553 Walnut Street, Macon. Practice limited to pediatrics.

DR. CHAMPNEYS H. HOLMES, Atlanta, has been asked by the National Tuberculosis Association to serve as a member of the Committee on Nominations of Directors. Only five members are appointed and Dr. Holmes represents the Southern states. He is president-elect of the American College of Chest Physicians.

MAJOR LUCIUS F. WRIGHT, after serving three years in the medical corps of the United States Army at Honolulu, has been promoted to the rank of Lieutenant-Colonel and transferred to the Fitzsimons General Hospital, United States Army, Denver, Colorado. He is the son of Dr. and Mrs. Henry S. Wright. Dr. Henry S. Wright died a number of years ago but will be remembered as one of the prominent and successful physicians of Atlanta.

THE GEORGIA MEDICAL SOCIETY, Savannah, met on November 23, 1937. The program consisted of *Restoration of Motion in Bony Stiff Joints Illustrated by Colored Moving Pictures*, by Dr. Fred H. Albee, Medical Center of Venice, Florida; discussed by Dr. M. J. Epting and Dr. L. B. Dunn. *Some of the More Common Eye Conditions*, Dr. J. E. Smith, Charleston, S. C.; discussed by Dr. Geo. H. Faggart and Dr. E. N. Maner.

THE ATLANTA BRANCH of the American Association of University Women sponsored a discussion at Glenn Memorial Hall on the subject of *Does the Pub-*

lic Want Socialized Medicine? on November 19th. Dr. C. W. Roberts was the principal speaker, followed by Dr. C. C. Aven, Dr. Allen H. Bunce, Dr. Frank K. Boland, Dr. R. H. Oppenheimer, Dr. Jas. E. Paullin and Dr. H. C. Sauls.

DR. J. C. VERNER has been appointed local surgeon for the Southern Railway System at Commerce.

Dr. J. R. Garner, Atlanta, was appointed to represent the Association of American Railroads at the meeting of the Air Hygiene Foundation, Inc., held at the Mellon Institute, Pittsburgh, Pa., on November 30-December 2. Dr. Garner is chief surgeon for the Atlanta and West Point Rail Road Co., The Western Railway of Alabama, and the Georgia Railroad.

OBITUARY

Dr. Abner Wellborn Calhoun, Atlanta; member; Harvard University Medical School, Boston, Mass., 1923; aged 40; died suddenly in his office, Medical Arts Building, on November 3, 1937. He was born and reared in Atlanta, attended Boys' High School in Atlanta, and graduated from the University of Georgia at Athens. After he graduated in medicine, he served tion. Surviving him are three brothers: James V. Calhoun, Atlanta; Andrew B. Calhoun, Anderson, S. C., and John Calhoun, San Antonio, Texas. Rev. Richard Orme Flinn conducted the funeral from Spring Hill Chapel. Burial was in West View Cemetery.

Dr. Rufus Thomas Dorsey, Atlanta; member; Southern Medical College, Atlanta, 1897; aged 64; died of heart disease at his home on November 9, 1937. He was born at Fayetteville, Fayette County, and moved with his parents to Atlanta in his early school days. After he graduated in medicine from the Southern Medical College, he studied at Jefferson Medical College, Philadelphia, Pa., and was awarded a degree from that school; then he served as resident physician at the Jefferson Medical College Hospital. Dr. Dorsey served in the medical corps of the United States Army in the Philippine Islands during and immediately after the Spanish-American War. Later he was on the faculty of the Atlanta Medical College, then professor of clinical medicine at Emory University School of Medicine. Dr. Dorsey served as major in the medical corps of the United States Army during the World War and was stationed at the United States Marine Hospital, Staten Island, N. Y. With the exception of the time he served in the medical corps of the United States Army, his professional activities were in Atlanta where he treated efficiently hundreds of patients. Dr. Dorsey led a useful life and received many deserved honors. Surviving him are his widow; one sister, Mrs. Luther Z. Rosser, Jr.; two brothers, Hugh M. Dorsey and Cam D. Dorsey, all of Atlanta. Dr. Lester Rumble conducted the funeral services from Spring Hill Chapel. Interment was in West View Cemetery. Members of the Fulton County Medical Society who were pallbearers: Dr. O. D. Hall, Dr. Frank K. Boland, Dr. C. W. Roberts, Dr. Stephen T. Barnett, W. J. P. Kennedy. Other members of the society formed an honorary escort.

Dr. Lewis Sage Hardin, Atlanta; member; Southern Medical College, Atlanta, 1898; aged 64; died at a private hospital in Atlanta on November 12, 1937. He was born and reared at Blacksburg, South Carolina, and received his premedical education at the University of South Carolina at Columbia. Dr. Hardin formerly served on the staffs of the Emory University Hospital, Piedmont Hospital, Grady Hospital, St. Joseph's Infirmary and at the time of his death was actively engaged on the staff of the Georgia Baptist Hospital. Dr. Hardin was especially honored on his sixty-first birthday by his former patients and friends by furnishing and dedicating a room at the Georgia Baptist Hospital to his honor. He did postgraduate study at the Mayo Clinic, Rochester, Minnesota, at other institutions in Boston, New York City, and Philadelphia. He was chief of clinics in the Atlanta College of Physicians and Surgeons from 1900 to 1918. Hundreds of people became his warm personal friends during his forty years of practice. His remarkable success in surgery demonstrated his ability and ingenuity. His loyalty to medical organizations was shown by his continuous membership from the time he began practice in the Fulton County Medical Society, Clinical Congress of America, American College of Physicians, American College of Surgeons, and the American Medical Association. He was an ardent Christian and a member of the Methodist church. Surviving him are his widow, one daughter, Mrs. Robert Alston, Jr.; two sons, Ira H. Hardin and Lewis Sage Hardin, Jr. Funeral services were conducted by Rev. Louie D. Newton and Rev. J. B. Peters from the chapel of Brandon-Bond-Condon. Burial was in West View Cemetery.

BOOK REVIEWS

Minor Surgery, by Frederick Christopher, S.B., M.D., F.A.C.S., Associate Professor of Surgery at the Northwestern University Medical School, Chicago. Chief Surgeon at the Evanston (Ill.) Hospital; with a Foreword by Allen B. Kanavel, M.D., F.A.C.S., Professor of Surgery at the Northwestern University Medical School.

I have read considerably from cover to cover this one volume work consisting of 1,030 pages, and find it up-to-date, well written and illustrated. I feel that it is no doubt the best work of its kind that I have seen. Any one of several chapters in the work is worth the price of the book.

Every surgical intern should own one, and I strongly recommend it to anyone interested in general surgery.

GEO. W. FULLER, M.D.

Synopsis of Gynecology (Based on Text Book "Diseases of Women") by Harry Sturgeon Crossen, M.D., F.A.C.S., and Robert James Crossen, M.D. Second Edition, 347 pages, cloth. C. V. Mosby Co., St. Louis, 1937, price \$3.00.

A book primarily intended to aid students in review or to quickly cover the essential reading in a course in Gynecology. It is also serviceable for the general practitioner where reference is advisable but detailed dis-

cussion not required. The small compact form of the book makes it handy to carry about if necessary while studying. It is a concise, clear and handy presentation of the subject.

JOSEPH C. MASSEE, M.D.

Surgical Anatomy, by Grant Massie, M.B., F.R.C.S., Assistant Surgeon, Guy's Hospital, London. Third edition. Cloth. Price, \$6.50; 468 pages, with 153 illustrations. Philadelphia: Lea & Febiger, 1937.

A brief, concise and accurate ready reference handbook on surgical anatomy. An excellent selection of well labeled illustrations amply describe the text. It is in no sense a complete anatomic text but rather a review of the anatomy with definite clinical application.
EDGAR BOLING, M.D.

Year Book of General Surgery, 1936, by Evarts A. Graham, M.D. Price \$3.00. Pages 805. Chicago: The Year-Book Publishers, Inc., 1936.

The general character of this book maintains the standards which have been set by previous editions. The editor has summarized the more important contributions to the surgical literature in the last year. The book is of value due to the discussion of all phases of general surgery.

It is impossible to enumerate all recent changes which have been made. Considerable discussion has been given to the subject of anesthesia. Cyclopropane as anesthesia is said to offer many advantages over the other, particularly in operations on the thorax.

As is the usual case, many conflicting opinions are offered in the review of the various subjects. This enhances the value of the book. For further reference a bibliography is furnished with each topic discussed.

This book should be of benefit to the busy members of the profession who wish to have access to the recent advances in surgical diagnosis and particularly therapy.

J. D. MARTIN, JR., M.D.

SCIENTIFIC EXHIBIT—A. M. A.

Application blanks are now available for space in the Scientific Exhibit at the San Francisco Session of the American Medical Association, June 13-17, 1938. The Committee on Scientific Exhibit requires that all applicants fill out the regular forms.

Application blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

DO YOU WISH TO READ A PAPER BEFORE THE ASSOCIATION?

The preparation of a good paper on a medical subject is not an easy task, therefore it is not too early for those who contemplate seeking places on the scientific program at the next annual session of the Association, in Augusta, to give careful consideration to the subjects they plan to discuss.

Titles should be sent to Dr. H. Cliff Sauls, chairman, Medical Arts Bldg., Atlanta, or to the Secretary-Treasurer.

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1937-1938

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APRIL 26, 27, 28, 29, 1938
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Study of Maternal Mortality and Infant Deaths

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The Southern Section of the American Laryngo-
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 meet at the Georgian Terrace Hotel, Atlanta, January
 24, 1938. Dr. Murdock Euen, Atlanta, will entertain
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 Waring, T. P., DeRenne Apts., Savannah

Whelan, E. J., 14 West Jones St., Savannah
 Williams, L. W., 107 East Jones St.,
 Savannah
 Wilson, S. E., 12 West Jones St., Savannah
 Wilson, W. S., 303 East Taylor St.,
 Savannah (Hon.)

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 Johnston, T. H., Douglas
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 Joiner, R. M., Moultrie
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 McGehee, Henry M., Moultrie
 McGinty, W. R., Moultrie
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 Slocumb, C. B., Doerun
 Whittendale, W. H., Norman Park
 Woodall, J. B., Moultrie

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 Cochran, M. F., Newnan
 Elliott, C. C., Sargent
 McDonald, R. H., Newnan
 Peniston, Joe. B., Newnan
 Tanner, W. H., Newnan, Rt. 3
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CRISP COUNTY Officers

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 Dorminy, J. N., Cordele (Hon.)
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 Harvard, V. O., Arabi
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 McArthur, C. E., Cordele
 McArthur, T. J., Cordele (Hon.)
 (deceased)
 Miller, W. A., Arabi
 Smith, M. R., Cordele
 Whelchel, A. J., Cordele
 Williams, H. J., Cordele
 Williams, L. E., Cordele
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 Vice-President..... Welch, Carl B.
 Secretary-Treasurer..... Ehrlich, M. A.
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 Brinson, H. H., Brinson (Asso.)
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 Ehrlich, M. A., Brinbridge
 Ehrlich, Sigo, Bainbridge (deceased)
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 Smith, E. C., Donalsonville
 Welch, Carl B., Attapulugus
 Wheat, R. F., Bainbridge
 Whittle, Wm. E., Iron City
 Wilkinson, W. L., Bainbridge
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 Delegate..... Allen, H. H.
 Alternate Delegate..... McCurdy, Willis T.

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 Bldg., Decatur

Allgood, C. L., Scottdale
 Andrews, W. W., Tucker
 Ansley, H. G., 121 Clairmont Ave., Decatur
 Blincoe, Homer, P. O. Box 789, Emory University
 Cunningham, C. E., Masonic Temple, Decatur
 Duncan, G. A., Masonic Temple, Decatur
 Evans, J. R., 120 Clairmont Ave., Decatur
 McCurdy, W. T., Sr., Stone Mountain
 McCurdy, Willis T., Stone Mountain
 Pattillo, C. E., 145 Clairmont Ave., Decatur
 Smith, W. P., Jr., 319 Church St., Decatur
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 Delegate, Davis, E. B.

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 Davis, E. B., Byromville
 Evans, A. P., Pinehurst
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 Mobley, H. A., Vienna
 Rose, J. R., Unadilla

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 Alternate Delegate, Rhyne, W. P.

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 Cook, W. S., Albany
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 McDowell, Thos. C., Albany (Hon.) (deceased)
 McKemie, H. M., Albany
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 Welch, Leonard E. (Hon.) (deceased)

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Members

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 Vice-President, Ward, G. A.
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 Gaines, T. H., Elberton, R. F. D.
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 Johnson, J. E., Elberton
 Johnson, J. E., Jr., Elberton
 Johnson, W. A., Elberton
 Mattox, B. B., Elberton (Hon.)
 Smith, A. C., Elberton
 Smith, F. A., Elberton
 Thompson, D. N., Elberton
 Ward, G. A., Elberton, Rt. 1

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 Vice-President, Yonmans, S. S.
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 Delegate, Chandler, J. H.
 Alternate Delegate, Franklin, R. C.

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 Youmans, S. S., Oak Park

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 Delegate, Harbin, W. P., Jr.
 Alternate Delegate, Maddox, R. C.

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 Borders, W. A., Armuchee
 Chandler, J. L., Rome
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 Conner, J. C., Cave Springs
 Cox, R. P., Rome
 Dellinger, A. H., Rome
 Elmore, B. V., Rome
 Garrard, J. L., Rome
 Gilbert, Warren, Rome
 Harbin, Lester, Rome
 Harbin, R. M., Jr., Rome
 Harbin, R. M., Sr., Rome
 Harbin, W. P., Jr., Rome
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 Johnson, Ralph N., Rome
 Lewis, W. H., Rome
 Maddox, R. C., Rome
 McArthur, C. H., Rome (Hon.)
 McCall, J. T., Rome
 McCord, M. M., Rome
 McCord, Ralph, Rome
 Methvin, S. R., Lindale
 Moore, Clifford, Lindale
 Moss, T. H., Rome
 Mull, J. H., Rome
 Rontledge, A. F., Rome
 Sewell, W. A., Rome
 Shaw, W. J., Rome (Hon.) (deceased)
 Smith, G. B., Rome

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 Delegate, Mashburn, Marcus

Members

Lipscomb, W. E., Cumming

Mashburn, Marcus, Cumming

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 Secretary-Treasurer, Smith, B. T.

Members

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 Brown, S. D., Royston
 McCrary, H. L., Royston
 McCrary, J. O., Royston
 Parker, G. M., Carnesville
 Pool, E. T., Lavonia
 Ridgway, Robert E., Royston
 Ridgway, G. T., Royston
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 President-Elect, C. C. Aven
 Vice-President, J. H. Rogers
 Secretary-Treasurer, M. T. Harrison
 Delegate, H. Cliff Sauls
 Delegate, C. C. Aven
 Delegate, C. W. Strickler
 Delegate, Ed H. Greene
 Delegate, B. Russell Burke
 Delegate, Everett L. Bishop
 Delegate, T. C. Davison
 Delegate, Jas. J. Clark
 Delegate, C. C. Aven (Elected 1935)
 Alternate Delegate, Lewis M. Gaines
 Alternate Delegate, C. W. Roberts
 Alternate Delegate, Geo. W. Fidler
 Alternate Delegate, B. T. Beasley
 Alternate Delegate, Dan C. Elkin
 Alternate Delegate, John B. Fitts
 Alternate Delegate, Avary M. Dimmock
 Alternate Delegate, Champ H. Holmes
 Alternate Delegate, M. T. Harrison

Members

Abercrombie, T. F., State Capitol, Atlanta
 Adams, C. M., 23 West Paces Ferry Road, Atlanta
 Adams, C. R., 840 Gordon St., S. W., Atlanta
 Adams, H. M. S., Candler Bldg., Atlanta
 Agnor, Elbert B., Grady Hospital, Atlanta (Asso.)
 Aiken, W. S., First Nat'l Bank Bldg., Atlanta
 Alden, H. S., Medical Arts Bldg., Atlanta
 Allen, E. A., Candler Bldg., Atlanta
 Allison, Gordon G., Haas-Howell Bldg., Atlanta
 Almand, C. A., 717 Brookridge Drive, N. E., Atlanta
 Anderson, Wm. Willis, 478 Peachtree St., N. E., Atlanta
 Armstrong, T. B., Candler Bldg., Atlanta
 Armstrong, W. B., 478 Peachtree St., N. E., Atlanta
 Artand, F. E., New Port Richey, Fla.
 Artega, Oliver, Atlanta Nat'l Bank Bldg., Atlanta
 Arthur, J. F., 105 Forrest Ave., N. E., Atlanta
 Asher, Wm. T., 780 Ponce de Leon Ave., N. E., Atlanta
 Askew, H. H., Candler Bldg., Atlanta
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 Avary, A., Soldiers' Home, Atlanta (Hon.) (deceased)
 Avary, J. C., 969 West Peachtree St., N. E., Atlanta (Hon.)
 Aven, C. C., Medical Arts Bldg., Atlanta

- Ayers, A. J., Medical Arts Bldg., Atlanta
 Ayer, G. D., 152 Forrest Ave., N. E., Atlanta
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 Bailey, M. K., Medical Arts Bldg., Atlanta
 Baird, Jas. B., Medical Arts Bldg., Atlanta
 Baird, J. Mason, Medical Arts Bldg., Atlanta
 Baker, Luther P., Atlanta Nat'l Bank Bldg., Atlanta
 Baker, W. Pope, 979 Springdale Road, N. E., Atlanta
 Ballard, I. W., Forest Park
 Ballenger, E. G., Healey Bldg., Atlanta
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 Barber, W. E., 1031 Springdale Road, N. E., Atlanta (deceased)
 Barfield, F. M., Room 232, 10 Pryor St., Atlanta
 Barfield, Hugh H., 478 Peachtree St., N. E., Atlanta
 Barfield, J. R., 592 Clifton Road, N. E., Atlanta
 Barnett, Crawford F., Jr., 478 Peachtree St., N. E., Atlanta
 Barnett, S. T., 26 Linden Ave., N. E., Atlanta
 Barnett, S. T., Jr., 26 Linden Ave., N. E., Atlanta
 Bartholomew, R. A., 1259 Clifton Road, N. E., Atlanta
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 Benson, M. T., Jr., Medical Arts Bldg., Atlanta
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 Bivings, Wm. Troy, Exchange Bldg., Atlanta
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 Boland, F. Kells, Jr., 478 Peachtree St., N. E., Atlanta
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 Bradfield, Jos. H., Battle Hill Sanatorium, Atlanta
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 Camp, R. T., Fairburn
 Camp, W. R., Fairburn
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 Cooke, Virgil C., Healey Bldg., Atlanta
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 Daniel, W. W., Ga. Savings Bank Bldg., Atlanta
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 Eubanks, Geo. F., 478 Peachtree St., N. E., Atlanta
 Ezzard, Thos. M., Roswell
 Fancher, J. K., Medical Arts Bldg., Atlanta

- Fanning, O. O., Grand Bldg., Atlanta
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 Foster, K. E., College Park
 Foster, Maude E., Hurt Bldg., Atlanta
 Fowler, Clarence D., 669 Cumberland Road, N. E., Atlanta
 Fowler, M. F., 478 Peachtree St., N. E., Atlanta
 Fraser, Major Henry E., U. S. Penitentiary Hospital, Atlanta (Asso.)
 Freeman, J. F., 968 Hemphill Ave., N. W., Atlanta (Asso.)
 Fuller, Geo. W., 478 Peachtree St., N. E., Atlanta
 Fuller, J. R., Citizens & Sou. Nat'l Bank Bldg., Atlanta
 Funke, John, 712 Durant Place, N. E., Atlanta
 Funkhouser, W. L., 33 Ponce de Leon Ave., N. E., Atlanta
 Fuqua, E. F., 986 Hemphill Ave., N. W., Atlanta
 Gaines, L. M., 478 Peachtree St., N. E., Atlanta (deceased)
 Gardner, W. A., Veterans' Administration Facility, Coatesville, Pa.
 Garner, John P., Medical Arts Bldg., Atlanta
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 Gibson, Eugene F., College Park
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 Giddings, Glenville, 478 Peachtree St., N. E., Atlanta
 Gilbert, W. L., County Courthouse, Atlanta (Hon.)
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 Goodwyn, Thos. P., 478 Peachtree St., N. E., Atlanta
 Green, A. J., Union City
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 Grove, L. W., Medical Arts Bldg., Atlanta
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 Hailey, Howard, Candler Bldg., Atlanta
 Hailey, Hugh, Candler Bldg., Atlanta
 Hall, O. D., Ga. Baptist Hospital, Atlanta
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Augusta
Chaney, Ralph H., 1001 Greene St., Augusta
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Augusta
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Augusta
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Eve, H. J., 619 Greene St., Augusta
(deceased)
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Augusta
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Gray, J. D., 1345 Greene St., Augusta
Greenblatt, Robert B., 1001 Greene St.,
Augusta
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Augusta
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School of Medicine, Augusta
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Augusta
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Kilpatrick, Chas. M., 1345 Greene St.,
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Augusta
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Augusta
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Mulherin, Philip A., 1001 Greene St.,
Augusta
Mulherin, W. A., 1001 Greene St., Augusta
Murphey, Eugene E., 432 Telfair St.,
Augusta
Norvell, J. T., Southern Finance Bldg.,
Augusta
Page, Hugh N., Southern Finance Bldg.,
Augusta
Philpot, W. K., 1345 Greene St., Augusta
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Augusta
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of Medicine, Augusta
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Augusta
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Augusta
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of Medicine, Augusta
Sherman, John H., 1122 Johns Road,
Augusta

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Augusta
Stevens, A. H., Southern Finance Bldg.,
Augusta
Sydenstricker, V. P., University Hospital,
Augusta
Tessier, Claude E., Masonic Bldg., Augusta
Tessier, L. P., Masonic Bldg., Augusta
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Augusta
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Thurmond, J. W., 407 Seventh St., Augusta
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Todd, L. N., University Hospital, Augusta
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of Medicine, Augusta
Traylor, Geo. A., 2311 Kings Way,
Augusta
Ward, C. D., 1345 Greene St., Augusta
Weeks, J. L., Harlem
Weeks, R. B., Southern Finance Bldg.,
Augusta
Wilcox, E. A., 1345 Greene St., Augusta
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Augusta
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 Facility, Lake City, Fla.
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TWIGGS COUNTY

Member

Rogers, H. A., Jeffersonville

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 Delegate.....Blackburn, J. D.
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 Bridges, B. L., Thomaston

Carter, R. L., Thomaston
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 McCurdy, J. W., Thomaston
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 Shields, H. F., Chickamauga
 Shields, J. A., LaFayette
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 Delegate.....Aycock, T. R.

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PROGRAM—AUGUSTA SESSION

Titles for papers to be read before the next annual session of the Association should be submitted to the secretary-treasurer or the chairman of the Committee on Scientific Work immediately.

EUGENE ROLLIN CORSON, M.D.

TESTIMONIAL GIVEN DR. CORSON

The Georgia Medical Society presents this testimonial to Eugene Rollin Corson, M.D., as an indication of its admiration and esteem.

Because: He has made conspicuous additions to general medical knowledge through his investigations of disease peculiar to the South and to the Negro race, and—

BECAUSE: He ranks among the pioneers in the field of roentgenology where for years his labors have produced important and original results to the detriment of his health and well-being.

His work has been recognized all over the world and he has been made a member of the following societies: Association of American Anatomists, American Electro-Therapeutic Association, American Medical Association, American Roentgen Ray Society.

He is also a member of the Georgia Medical Society and the Medical Association of Georgia.

We, the undersigned officers of the Georgia Medical Society pursuing the desires and intent of its members present to him this document attesting our approbation and appreciation of his professional attainments.

GEORGE H. FAGGART, *President*
RUSKIN KING, *Vice-President*

OTTO W. SCHWALB, *Secretary-Treasurer*

E. C. DEMMOND, *President-Elect*

Savannah, Georgia October 2, 1937.

—*Savannah Morning News*, Oct. 22, 1937

The above is a copy of the words on an engraved testimonial published in *The Savannah Morning News*. The engraving is decorated throughout and is evidently beautiful especially with the seal and emblem of the Georgia Medical Society at the top of the testimonial. Since the *Journal* has no cut of the engraving, its readers must draw on their imaginations to vision the beauty of the testimonial.

Other paragraphs quoted in part from *The News* are:

Dr. George H. Faggart, president, presided at the meeting and introduced the speakers. He himself spoke briefly of Dr. Corson's accomplishments which earned him national and international renown.

Dr. Jabez Jones, chairman of the program committee for the dinner, was the first speaker. Contrary to the usual manner of praising a man by recounting his achievements, Dr. Jones spoke of his failures because, he said, "A man gains as much knowledge from his failures as from his successes." One illustration was that Dr. Corson "failed to use a cat bone successfully in a bone grafting experiment attempted in his early research."

Dr. Herman W. Hesse spoke briefly and characterized Dr. Corson as "different." He paid tribute to his scholarly ancestry and commented on the studious and cultured life he had lived and paid full tribute to him for his scientific accomplishments.

Dr. R. V. Martin was the principal speaker of the evening, and declared as he addressed Dr. Corson, "It is primarily your career as a physician that we celebrate, our tribute is to you the ideal physician but we should not have paid it, had we not revered you as a man.

Your lofty ideals have been a satisfaction to this honorable body." Dr. Martin complimented Dr. Corson for his courteous treatment accorded fellow physicians and the interest manifested in young doctors. He then reviewed his experiments and the course of his medical progress.

Dr. Wm. H. Myers, Savannah, wrote as follows: "On October 21, 1937, the Georgia Medical Society gave a dinner complimentary to Dr. Eugene Rollin Corson. There was a large attendance, and Dr. Corson was honored by an un-named donor, who presented him with an illuminated testimonial as well as a check for \$1,000.00."

CARDIOVASCULAR SYPHILIS: CLINICAL LECTURE AT ATLANTIC CITY SESSION

JAMES E. PAULLIN, Atlanta, Ga. (*Journal A. M. A.*, Oct. 2, 1937), claims that involvement of the cardiovascular system accounts for a large group of persons who suffer the most disabling effects of latent syphilis. Syphilitic aortitis, from the standpoint of the pathologist, is a disease recognized far more frequently at necropsy than in the clinic. Its incidence in different parts of the country varies with the character of the population. Since syphilitic infection is far more prevalent in Negroes than in other races and since it occurs more frequently among the ignorant and the indigent, it naturally follows that aortitis is most commonly found in these groups. From statistical data collected by Turner it would seem that approximately 10 per cent of all patients with latent syphilis will have demonstrable clinical evidence of cardiovascular involvement. In a series of 6,253 cases of syphilis in a late stage collected by the Cooperative Clinical Group, approximately 619, or 10 per cent, of the patients had cardiovascular syphilis on admission or acquired it later. The wonder is that a far greater number did not give clinical manifestations. Warthin and his associates have observed at autopsy that the aorta is involved, either macroscopically or microscopically, in approximately 90 per cent of persons with latent syphilis. The age group most frequently affected is that between 30 and 35 years, although cases may occur earlier and some even later. Every person who has syphilis is an excellent candidate for cardiovascular involvement. If every person who acquires syphilis could receive the benefits of adequate treatment, such as has been outlined by the Cooperative Clinical Group, there would be few patients with cardiovascular manifestations of latent syphilis. A patient with cardiovascular syphilis should be subjected to the usual forms of treatment that are prescribed for any patient with heart disease. As to specific treatment, patients may be divided into two groups, those who have a normally functioning myocardium and those who have congestive heart failure. If the patient when first seen has cardiovascular syphilis and congestive heart failure, antisyphilitic treatment must be undertaken with the greatest care. Potassium iodide is given by mouth as soon as possible, and smaller doses of the heavy metals at weekly intervals.



Oliver Wendell Holmes

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Supplement
to

THE JOURNAL
OF THE
MEDICAL ASSOCIATION OF GEORGIA

Owned and Controlled by the Medical Association of Georgia
PUBLISHED MONTHLY under direction of the Council

EDGAR D. SHANKS, M.D., *Editor*

Supplement 1
Volume XXVI

Atlanta, Ga., February, 1937

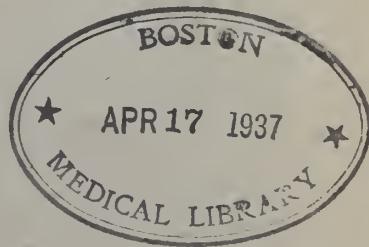
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To All Members

of the

General Assembly

State of Georgia



Entered at the Post Office at Atlanta, Ga., under the Act of March 3, 1879

Accepted for mailing at the special rate of postage provided for in Section 1103, Act of Oct. 6, 1917, authorized Nov. 14, 1928

To All Members of the General Assembly, State of Georgia:

EVERY individual has an inalienable right to choose his own religion and his own doctor. Our plan excludes no one.

We believe that every individual who offers his services to the public to practice any branch of the Healing Art should have a knowledge of all the organs and parts of the human body, how they perform their functions, what causes disease and what changes take place during disease.

It has been a hundred and thirty-three years since a group of seventeen doctors organized the first Medical Society in Georgia. Their object then, as now, was to elevate the standard of the medical profession and protect the people from epidemic and contagious diseases.

When this heroic group met in 1804, the State was overrun with smallpox and malaria. Epidemics of cholera and yellow fever paralyzed our commerce and industries, took a fearful toll of human life and cost the State millions of dollars annually.

Since that time members of the medical profession have served on municipal, county and state boards of health without fee or reward, that better health conditions might prevail for the benefit of all the people.

At the present time surgical procedures and childbirth have been made painless. The mortality from tuberculosis, diphtheria, scarlet fever and typhoid fever has been reduced 70 to 40 per cent. Smallpox, yellow fever and cholera no longer harass our industries and close our port cities to the commerce of the world.

Hookworms are being eradicated and malaria controlled by our excellent State Department of Public Health which is a living monument to your medical profession.

THE MEDICAL ASSOCIATION OF GEORGIA is sponsoring a group of Bills at this session of the General Assembly intended for the benefit of the citizens of Georgia. For proper guidance in deciding medical problems, we urge you to consult your family physician—the doctor who brings your children safely into the world and who comforts you when your loved ones pass away.

LEGISLATIVE PROGRAM

of the

MEDICAL ASSOCIATION OF GEORGIA

1937

The following legislation is sponsored by THE MEDICAL ASSOCIATION OF GEORGIA at this session of the General Assembly. Your support of these measures will be appreciated

BASIC SCIENCE BILL—SYNOPSIS (H. 37—S. 32)

An Act to establish a state board of examiners in the basic sciences underlying the practice of the healing art. The appointment of a board of five members by the governor. No person shall be permitted to practice any branch of the healing art until he or she presents a certificate of ability in anatomy, bacteriology, chemistry, pathology and physiology. Provides for certificates by reciprocity, collection of fees and appeal. This bill is not retroactive, therefore it will not affect any licensed practitioner of the healing arts now in practice.

THE MEDICAL ASSOCIATION OF GEORGIA believes in the individual's right to the free choice of his physician, but believes that a man who offers his services to the public should be *properly qualified* with a knowledge of the human body and the diseases to which it is heir.

LIEN BILL FOR PRIORITY OF CLAIMS—SYNOPSIS (H. 36—S. 37)

This bill proposes to make the claims of physicians, nurses, dentists, and hospitals a first lien, attorneys excepted, on claims of injured persons against others on account of carelessness, or other things which may cause injury. Medical care shall become a prior claim in any agreed settlement or judgment in any action because of such injury where, and by whom such medical care was rendered.

An automobile may be wrecked, injuring all occupants, some of whom are taken to a hospital where they remain indefinitely. Those persons responsible for the accident, and injuries to individuals, frequently leave the community and State without discharging their obligations to the hospital, nurse, doctor and injured.

AMENDMENT TO WORKMEN'S COMPENSATION ACT

An amendment is proposed for the Workmen's Compensation Act.

The present law is not sufficient to take care of persons with multiple injuries, such as fractured skulls, fractured spines, fractured pelves, fractured femurs and various other serious injuries, some of which are internal.

CONSTITUTIONAL AMENDMENT—SYNOPSIS (S. Res. 9)

A proposed amendment to the Constitution of the State to permit counties to appropriate funds for medical care and hospitalization of their indigent sick.

BARBITURIC ACID AND DERIVATIVES—SYNOPSIS

A Bill to regulate the sale and distribution of barbituric acid, barbituric acid salts, their derivatives, and for other purposes.

Evidence presented by numerous physicians and scientific workers throughout the world shows that barbituric acid and its derivatives cause serious blood diseases. This measure is designed to protect the public.

FEDERAL SOCIAL SECURITY ACT

Cooperation with other groups to obtain benefits allowed under the Social Security Act.

A BILL FOR INDIGENT CANCER PATIENTS (H. 78)

An Act to promote the prevention and cure of cancer: to authorize the State Department of Public Health to establish a standard for the organization, equipment and conduct of cancer units or departments in general hospitals in this State and to conduct an educational campaign for cancer control; and to provide a plan for the care and treatment of indigent persons suffering from cancer.

GROUP HOSPITALIZATION

The Georgia Hospital Association proposes a plan and submits a bill for group hospitalization. While this bill is sponsored by the Hospital Association, the Medical Association of Georgia approves the plan. This is a monthly prepayment plan.

Bills sponsored by other organizations throughout the State which have our endorsement and support are: the Drivers' License Law and the Sterilization Act.

Both of these measures are aimed at *prevention* and are, therefore, in the interest of public health.

Respectfully submitted,

COMMITTEE ON PUBLIC POLICY AND LEGISLATION
OF THE
MEDICAL ASSOCIATION OF GEORGIA

YOUR FAMILY PHYSICIAN

*A SERVANT of all Mankind who brings you
relief in time of sickness . . . who inspires
Faith...who serves unselfishly...often without
a thought of reward of a material nature.*

*His life is devoted to the saving of human lives
. . . His Greatest Reward comes through accom-
plishment . . . for nothing is . . . or can be . . .
as valuable as human life.*

*Your Physician . . . unknowingly . . . perhaps . . .
has created a history of service that is match-
less . . . so we ask you to consider him as
a steadfast friend and counsellor.*



CRAWFORD WILLIAMSON LONG, M.D.

The physicians of Georgia are deeply grateful to the General Assembly for the Act which made available funds for the erection of the statue, at Danielsville, in honor of Dr. Crawford W. Long, discoverer of ether as an anesthetic and one of the founders of THE MEDICAL ASSOCIATION OF GEORGIA.

MEDICAL ASSOCIATION OF GEORGIA
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1936-1937

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MAY 11, 12, 13, 14, 1937

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Russell H. Oppenheimer	Emory University
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Roy R. Kracke	Emory University
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J. A. Redfearn	Albany
T. F. Sellers	Atlanta
Ernest F. Wahl	Thomasville

Prize for Hookworm Control*

W. F. Reavis, Chairman	Waycross
E. F. Wahl	Thomasville
H. M. Tolleson	Eastman

*Award by the Ware County Medical Society.

Study of Maternal Mortality and Infant Deaths

H. F. Sharpley, Jr., Chairman	Savannah
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A. J. Waring	Savannah

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Fourth District

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R. Hugh Wood	Atlanta
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Fraternal Delegate to the Georgia Pharmaceutical Association

Glenville Giddings	Atlanta
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--

TO VISIT FLORIDA: Wm. S. Goldsmith, Atlanta, and Arthur G. Fort, Atlanta.
--

TO VISIT NORTH CAROLINA: Clarence L. Ayers, Toccoa, and Grady N. Coker, Canton.
--

TO VISIT SOUTH CAROLINA: Wm. A. Mulherin, Augusta, and H. M. Michel, Augusta.
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Second District—C. K. Sharp, Arlington, Sept. 1, 1939.

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Fourth District—Marvin M. Head, Zebulon, Sept. 1, 1937.
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Ninth District—L. C. Allen, Hoschton, Sept. 1, 1939.
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Tenth District—Wm. A. Mulherin, Augusta, Sept. 1, 1937.
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State of Georgia at Large Pharmaceutical Association

T. C. Marshall, Atlanta, Sept. 1, 1941.

W. T. Edwards, Augusta, Sept. 1, 1941.
--

Georgia Dental Association

J. G. Williams, D.D.S., Atlanta, 1940.
--

Paul McGee, D.D.S., Waycross, Sept. 1, 1940

Directory of the Medical Association of Georgia for 1936

Corrected by Secretaries of County Societies to January 22, 1937

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Blanchard, C. A., 926 Broad St., Augusta
Blanchard, P. G., Appling
Brittingham, Jno. W., 1345 Greene St., Augusta

Brown, T. P., Marion Bldg., Augusta
Bryans, C. L., Southern Finance Bldg., Augusta
Burdashaw, J. F., Johnson Bldg., Augusta
Burpee, C. M., University Hospital, Augusta
Butler, J. H., Southern Finance Bldg., Augusta

Callison, H. Grady, Department of Health, Columbia, S. C.
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Crane, C. W., 1345 Greene St., Augusta
Cranston, W. J., Southern Finance Bldg., Augusta

Crichton, Robert B., 434 Broad St., Augusta
Davidson, A. A., 1116 Greene St., Augusta
Eve, H. J., 619 Greene St., Augusta
Gibson, C., Thomson
Goodrich, W. H., Southern Finance Bldg., Augusta

Goodwin, T. W., 1345 Greene St., Augusta
Gray, J. D., 1345 Greene St., Augusta
Harrell, H. P., Southern Finance Bldg., Augusta

Henry, C. G., Southern Finance Bldg., Augusta
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Kilpatrick, Chas. M., 1345 Greene St., Augusta

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Mulherin, Philip A., 1001 Greene St., Augusta

Mulherin, Wm. A., 1001 Greene St., Augusta
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Robertson, J. Righton, 1345 Greene St., Augusta

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Roule, J. Victor, Southern Finance Bldg., Augusta

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Sydenstricker, V. P., University Hospital, Augusta

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O'Neal, Rance, West Point
O'Neal, R. S., LaGrange
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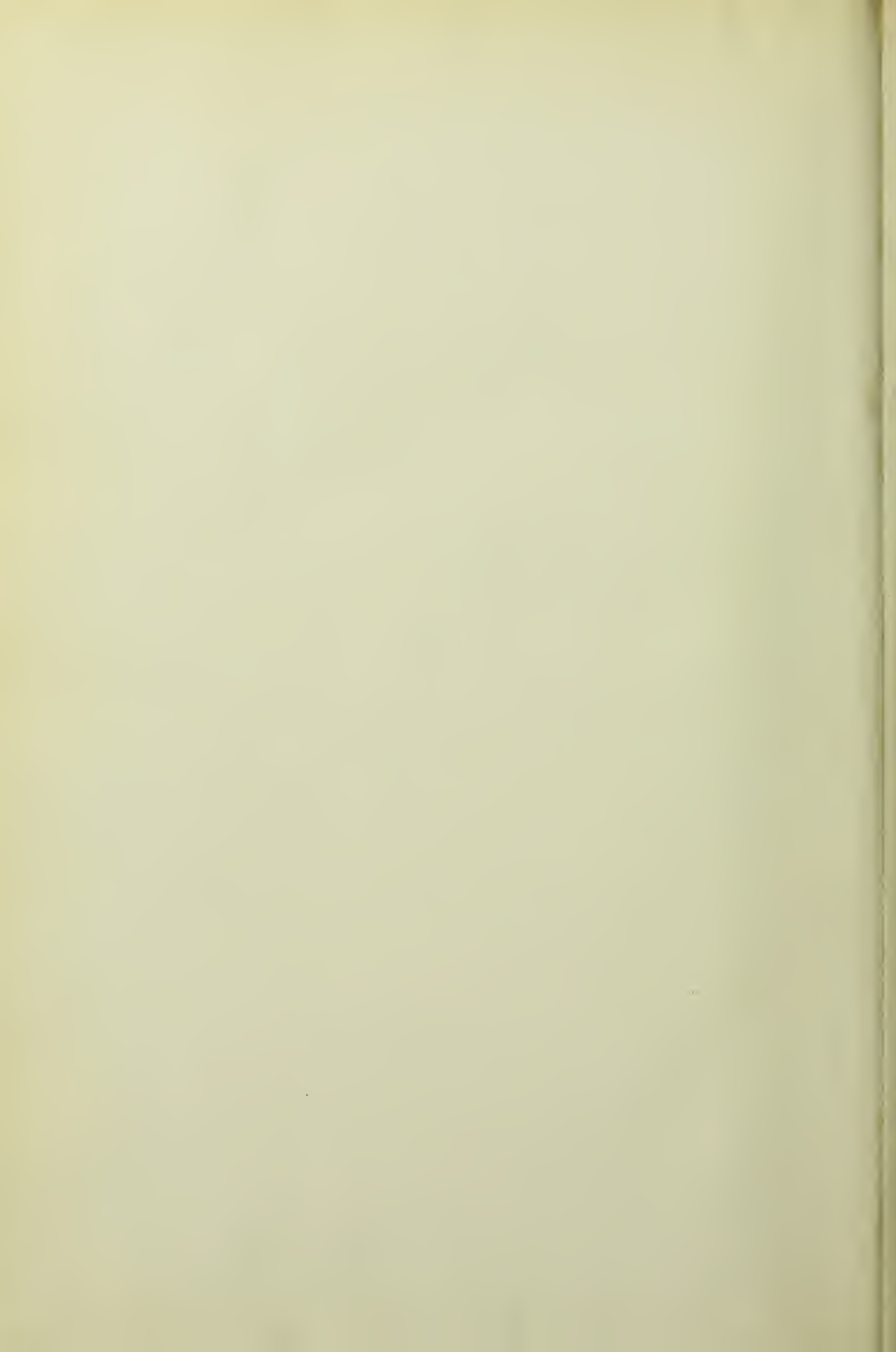
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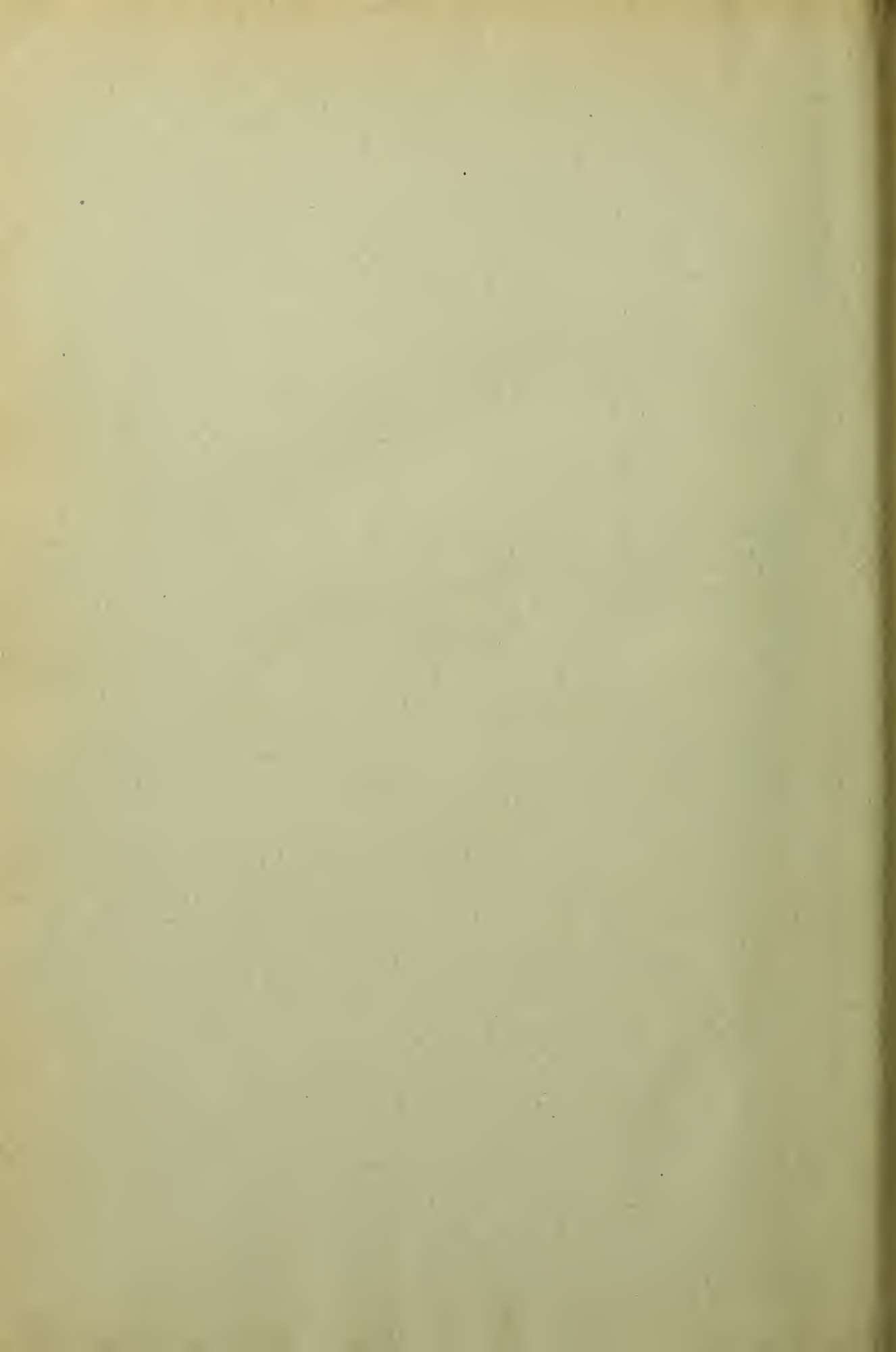
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